American Gas Association MONTHLY

Gas Wonderland at 1940 Fair

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Community Development Plans

•

Highlights of Sales Problems

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Commercial Gas Refrigeration

•

Packaged Tools for Industry

April 1940

VOLUME XXII NUMBER 4

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The 1939 Proceedings of the American Gas Association has just been printed and (conveniently broken down into General Sessions, and Accounting, Commercial, Industrial Gas and Technical Sections) shows specifically the developments in all phases of the industry. Whether your interests are in one department or inter-related, information is readily and easily available, and there is no reason why you shouldn't be one of those "in the know." This publication is a composite record of the last convention (held in October), addresses and committee reports together with papers from various conferences and special articles written during the year.

This volume covers a period in the history of the industry which was characterized by continuous expansion, and which saw over 300,000 more domestic gas customers served by manufactured and natural gas utilities than in the previous year. National advertising reached its fourth year of recognized excellent performance, and an important research program was established.

In this year's Proceedings many will undoubtedly be interested in the latest study on collection practices undertaken by thirty-four companies, the results of which are guaranteed to provoke much thought and discussion. And then the symposium on gas in new homes, participated in by three leading experts, is gold in the hills of every commercially minded gas man. Successful methods in selling standard rated industrial gas furnaces, and reasons why gas is forging ahead in the metals field are just two of the many other important subjects which should keep the industrial gas enthusiast always within reach of a "Proceedings."

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The 1939 Proceedings contains over 600 pages of carefully indexed and illustrated material. *Send for your copy now* (last year's edition was sold out completely). The price is $3.00 to members, and $7.00 to non-members.

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American Gas Association MONTHLY

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"Good Haul," a prize-winning picture by E. V. Kesinger of the Natural Gas Pipeline Co. of America, Chicago. It shows two rope knives removed with one run of the fishing tool from a partially-completed gas well in the Texas Panhandle.

American Gas Association MONTHLY

JAMES M. BEALL, *Editor*

FACING THE FACTS
. . . . The Gas Industry at the Crossroads

By WALTER C. BECKJORD

President, American Gas Association

AS I look back over more than thirty years' active experience in the gas business, I am impressed with two things,—first, that we have made remarkable progress in the sale and utilization of our product in which the development of long distance transmission lines supplying natural gas to large industrial centers has played no small part; and second, that we are still largely talking about the same kind of problems we did years ago. That point comes clearly to my mind as I review the papers I wrote over ten years ago covering the problems of that time.

We have kept pace with the progress of the times, and we have to a great extent properly met our competitive situations. We have developed comparatively small domestic science corporations into large industrial units supplying service of every sort to domestic, industrial and large power consumers. The industry as a whole outranks the steel industry in total investment, and has taken its place as one of the great achievements of a most remarkable generation of progress.

•

However, size alone does not necessarily mean perfection. Sometimes it may be a disadvantage. We have tackled each problem in turn, and as we realized we were losing ground in certain quarters, such as lighting, for instance, we immediately made new ground in fields that were formerly untouched. In turn, cooking, water heating, house heating and refrigeration were developed and now air conditioning is on the platform. This latter activity, however, will require most careful handling as it involves more engineering problems than all the others put together, and to date there has been a lack of comprehension of the problems involved, which has undoubtedly retarded progress in that field.

The fundamental problem, however, of selling our industry to our customers and the public at large is still with us, and still a problem. There has been perhaps too much taken for granted, too much complacency.

•

I made a statement in an address some time ago to the effect that changed habits of living, in diet, in home building, growth of the apartment house and the use of the automobile, had made a noticeable difference in our domestic sales. A syndicate writer picked up the statement and wrote an article on it, commenting on the hundreds of instances in other industries where this had been so. The change in women's clothing, wool to cotton, cotton to silk, the elimination of petticoats, and scanty clothing generally, different hats, entire change in styles, wooden ships to steel ships, horse and buggy days giving way to the automobile, etc. He rather poked fun at us for wailing about our troubles and said that was our business and we would have to learn to take care of ourselves. I think that's about right. This is a busy world and no one has time to feel sorry for any one else. It is still true that everyone has troubles—plenty of them, so let's stop talking about ours and do something about surmounting them—just like Hamlet did.

I quote in part the editorial in order to illustrate an outside viewpoint:

"The cotton textile industry, for instance, had no way of knowing that women were suddenly going to stop wearing three petticoats at a time and content themselves with one filmy slip; but they did, and the demand for cotton textiles is a good many million yards less today than it would be otherwise. Nor could the baking industry foresee that these same women would decide that bread was fattening—and thereby knock a sizeable hole in the annual sales of that commodity.

"You could go on citing such examples all day, and when you got through you would begin to understand why business execu-

Presented at New England Gas Association Annual Convention, Boston, Mass., March 14.

tives so often get gray hair. Ordinary competition a business man expects. He can meet that; it's part of the game. But when some new habit or idea suddenly carries his customers entirely away from the whole industry of which he is a part, he is next to helpless.

"Such shifts are characteristic of American life. They offer fortunes to the men who can foresee them and get in front of them; but they mean the biggest kind of trouble to the men who get caught in the squeeze."

We have made excellent progress in public relations but we still have many things to learn. The moving picture business, automobiles and radio, have shown us methods of salesmanship which make us look like the hare and the tortoise combination. I recall recently when I attended a performance of "Gone With the Wind," in a midwestern city. It so happened that our tickets were for the previous night's performance. With all the mob trying to get in the theatre, a little problem like that didn't daunt the theatre manager. He had the ushers get out a few extra chairs and what might have been an unpleasant incident became an extra accommodation. I thought at the time of the endless argument that might have occurred on such a situation in our business. Granted it cost nothing to put in the few chairs, but the point is the situation was solved to the customer's satisfaction.

Good Service Compulsory

After all, we have to give good service. We wouldn't stay in business if we didn't. We should accept that as a fact and proceed to other things to more firmly cement our customer relations. Above all we should make them feel happy to spend a portion of their monthly budget with us. I have often looked at a dirty, torn dollar bill, and thought of the many pleasant things I could exchange it for. We are merely trading our time for the other fellow's when we spend our money and that process should be one of mutual satisfaction.

Many of us now in this business can look back to the days when we read by kerosene lamp and candle light perhaps, and chopped kindling for the kitchen stove,—walked to school. But, we wouldn't be content to do that any more. Let us all remember, however, that there are many ways of doing the same thing.

There have been many sins of omission and commission in the long and fast moving and creditable history of the utility business, and I don't propose to get into a long political discussion of our troubles. There has been too much of that already. We have made some sound investments, and made progress for the benefit of the customer as well as the industry. On the other hand, no one can always be right. Someone has said if you can be right 50% of the time you are above the average.

Association Benefits

I want to take just a little time to speak of the benefits to be derived from just such meetings as these, and for the coordination of effort toward the welfare and progress of the industry through the manifold activities of the American Gas Association, and the various geographic associations which go along with it. A great deal of patient, time-consuming, faithful effort has gone into each step of progress that this or any other industry has made in improving its product, and rendering better service to the public. This is to be expected and we wouldn't be doing our job if we did otherwise. No one can live by himself, and we all get into ruts. We need the inspiration that contact with our fellow man gives us, and the opportunity for exchange of ideas is too valuable to lose. But, let us get away from the all too prevalent habit of wishful thinking, and do some straight thinking on the real issues involved.

The outstanding accomplishments of the last few years have largely been fostered in the activities of the A. G. A. National advertising has fulfilled a long felt want, and is telling our story of progress to the consuming public in a way that is bringing results.

The CP range is an achieved fact, sponsored by A. G. A. committees and with the cooperation of the manufacturers. There are over 115,000 in service now, and fully that many more will be sold this year. This effort has improved the entire line of cooking facilities, and has made possible a kitchen unit which is perhaps superior to anything on the market for the preparation of food. It has certainly stimulated our competitors which is the best evidence of good accomplishment.

The A. G. A. Testing Laboratories have done an outstanding job not only in acting as the watchdog on safety of appliances, but in definitely improving their efficiency, adaptability and appearance. The efficiency of top burners has been doubled and oven control and other automatic features have been made almost perfect. Without organization and coordination these things could not have been done.

House heating which was formerly scoffed at as undesirable, dangerous to load factor and to peace of mind on cold days, has been perfected until it is an accepted fact in new home design. Units are put in closets in small houses with no basements, and in some cases the cost of heating a home for a whole winter is less than $60 per year. It has filled a receding gap in the load curve due to changes in other classes of business, and some companies are holding their peak load at the same point after five years' experience with house heating, thereby proving that house heating has merely replaced other loads presumably lost or discontinued.

Gas Refrigeration Achievement

Refrigeration took fifteen years of patient and painstaking effort, often against great discouragement in the early days, but now it is an accomplished fact not only in new business but in the replacement market as well. It took courage and initiative to put that across and the Consolidated Edison Company of New York and the Servel Company are entitled to the everlasting gratitude of the gas industry for carrying that job to a successful completion.

Air conditioning is perhaps in the same position now as refrigeration was ten years ago, but it is more of an engineering problem and the factors will have to be worked out with great care. Many mistakes have been made but we are still on the right track. It is a real problem that challenges the best brains in the industry. Much constructive work has been done already and the

A. G. A. has fostered definite research work in conjunction with the Corey Hill Hospital in Boston.

Over the years in the development of this great mural painting which is America, many industries have been started, have climbed to dizzy heights of fame and then burned out like a fallen meteor. Their name is legion. A study of the stock market lists of ten or twenty years ago will show a number of industries now practically forgotten. Even in my day, the traction business, first thought to be the tops in the utility business, has now dropped back into a form of subsidized elevator service in most places. The horse and buggy days are memories to most of us, and the old-fashioned razor is almost a museum piece, but the gas industry has successfully survived its many vicissitudes and is going forward stronger and more aggressive than ever. Competition has only served as a stimulus to not only better but cheaper ways of doing things. While the struggle has not been without its casualties, the progress has been constant and upward.

Getting New Business

There has not been enough money spent on improving our utilization equipment and facilities, and adapting our product to meet modern conditions in the home. Any business that can invest nearly $5 for each $1 of gross and survive this far can afford to spend over 5% of its gross on new business effort and more than 1% of its gross on advertising. An investment in selling our business will pay bigger returns every time than some of the monuments we have erected in misplaced office buildings and outmoded methods of production. The appliance manufacturers cannot be expected to do it all. Many of them have done more than their share.

If we are to keep up in the forefront of an age that is moving as rapidly as this one, we must get up the courage and spirit that is necessary to meet competition intelligently and satisfy our customers and not live in memories of the past when it was felt that we were a monopoly that nothing could displace. That theory has gone the way of starched collars—it just doesn't exist any more. Things are moving so fast now that tomorrow becomes yesterday before the calendar actually indicates that fact.

The progress of the gas industry has kept pace with the march of time and we are still in the front rank, but this isn't enough. Momentum has probably had something to do with it, and we must be a little more sensitive to the needs of the times to keep up with the procession. We have survived so far in excellent shape and have hung up a record of which any one can be proud. But, that isn't going to be sufficient for the future. The problem is a little broader, considerably so, than one of simple economics. It involves the whole range of political and social philosophy and we cannot be content to hide our candle under the bushel. We must consider the whole range of essential activities involved in any struggle for the survival of the fittest, and in the struggle we must all play our part, for it isn't a one-man job. It needs the whole army to carry on.

A statistical analysis of any industry is most interesting, and it certainly in-

President Beckjord Sees Bright Future for Gas Industry

(Excerpts from address before A. G. A. Eastern Natural Gas Sales Conference, Pittsburgh, Pa., Feb. 29)

President Beckjord

The gas industry has been constantly moving forward. It has survived many business vicissitudes, which have completely submerged other industries. It has survived keen and intelligent competition of electricity, oil and coal. It has built itself into a wider range of activity and it has constantly kept up-to-date in the great plan of giving a modern service to the public.

★

So far as I have been able to find out from the records, there are no large gas companies which have gone into receivership, and gas service once started has never been abandoned save in a few instances of small towns where the development and growth was not propitious.

★

If there is such a thing as a platform for the year's work in the American Gas Association, I should like to have sales as one of the principal planks.

★

Through all this period of intense competition during the past generation, the gas industry and the A. G. A. ever since its formation in the early 1920's have stood for improvement in utilization equipment and in sales methods, and we have consistently striven to put in the hands of our customers better equipment at lower prices and greater efficiency.

★

I do not know of a time when the gas industry was in a better position to go forward than it is today. We have everything in our favor, sound economics as a basis for production and distribution, concentrated sales effort, greater enthusiasm on the part of our employees, and a line of equipment that is equal, and in many cases superior, to any on the market. The only way we can go is upward and I am sure we will uphold the traditions of the past in meeting and surmounting new obstacles as they appear.

dicates very clearly what has happened in the past. The conclusions drawn from such an analysis, however, do not always foretell the future. Other factors must be added—vision, resourcefulness and courage.

We are now in the 124th year of the founding of the gas business in this country, and during that time the population of this country has increased from something less than 10,000,000 people or about 4.5 persons per square mile, to over 132,000,000 or over 41 persons per square mile. We now have nearly 16,500,000 gas customers or 65% more than the entire population when it was started.

The earliest record in 1860 shows sales of about 4,000,000 cubic feet, whereas in 1939 there were 362,590,000 MCF of manufactured gas sold and a total of 2,263,000,000 MCF of natural gas. The peak year for manufactured gas was in 1929, 524,115,000 MCF sales, and 1939 was the largest in the natural gas industry.

Industry Ups and Downs

Contrast this with the sales of anthracite coal for instance, which started with 66,000 tons average per year in the period 1821-1830, rose to a peak of 99,612,000 tons in 1917 and in 1938 dropped to 46,099,000 tons. Bituminous coal averaged 75,000 tons in 1821, rose to a peak of 579,386,000 tons in 1918 and dropped to 344,630,000 tons in 1938, not much more than one-half of the peak production. Crude Oil production in 1861 was 2,479,000 barrels; in 1929, 1,007,323,000 and in 1938, 1,213,200,000 barrels.

Railroad passengers carried in 1891 averaged 546,762,000, rose to a peak in 1920 of 1,269,913,000 and now in 1938 is 454,508,000.

Motor car passengers increased from 1,778,000,000 in 1930 to 3,961,510,000 in 1938, thereby illustrating what has happened to railroad passengers carried.

Freight tonnage in 1891 was 692,446,000 tons, rose to a peak in 1918 of 2,447,092,000 tons and in 1938 dropped to 1,482,504,000 tons.

The number of telephones in use in 1895 was 339,500, rose to a peak of 20,068,000 in 1929 and in 1938 was 19,885,000.

The kilowatts generated in 1902 amounted to 2,507,000,000 and in 1938, 123,000,000,000.

A typical index of large manufacturing in the U. S. is steel ingots and castings which increased from a tonnage of 389,799 long tons in 1871, to a peak of 56,433,473 long tons in 1918, and is now back to 28,350,000 long tons in 1938. In the depth of the depression in 1932, it dropped to 13,681,162 long tons.

I think these are enough statistics to show that the gas industry has been very stable, showing substantial gains over the years. There are 16,500,000 gas ranges in use, exceeding by over 2,000,000 the number in use in 1929. Over 1,500,000 gas refrigerators have been sold since 1929 and about 900,000 central-fired house heating jobs installed. These figures show that the gas industry has not been asleep. It has been awake to competition and the record has been a good one, even though there has been a decrease in domestic consumption caused largely by changed habits of living.

Like other industries, however, we must meet the ever changing cycle by first finding new markets, and second by increasing the efficiency and adaptability of existing appliances. Air conditioning comes under the first heading and much constructive work has already been done, particularly in commercial application, but much remains to be done to increase the efficiency and reduce the installation cost for domestic installations. There is considerable engineering work to be done yet, and the problem is by no means a simple one, but it is well worthy of your study and in my opinion it may well develop into a very desirable summer load although it will by no means offset the winter house heating peak. It involves a consumption of 40,000 to 50,000 cubic feet per season for air conditioning as compared to three or four times that much for house heating.

For the second item, increased efficiency of appliances, a great deal has already been done, but more can be done. There have been some very interesting developments in orifice application for top burners. The offset orifice developed on the Pacific Coast has been utilized in changeover operations with great success, and the Sebald orifice looks as though it had great possibilities. CP specifications for water heaters and house heating units are being studied and it may well be they will equal the development in the CP range.

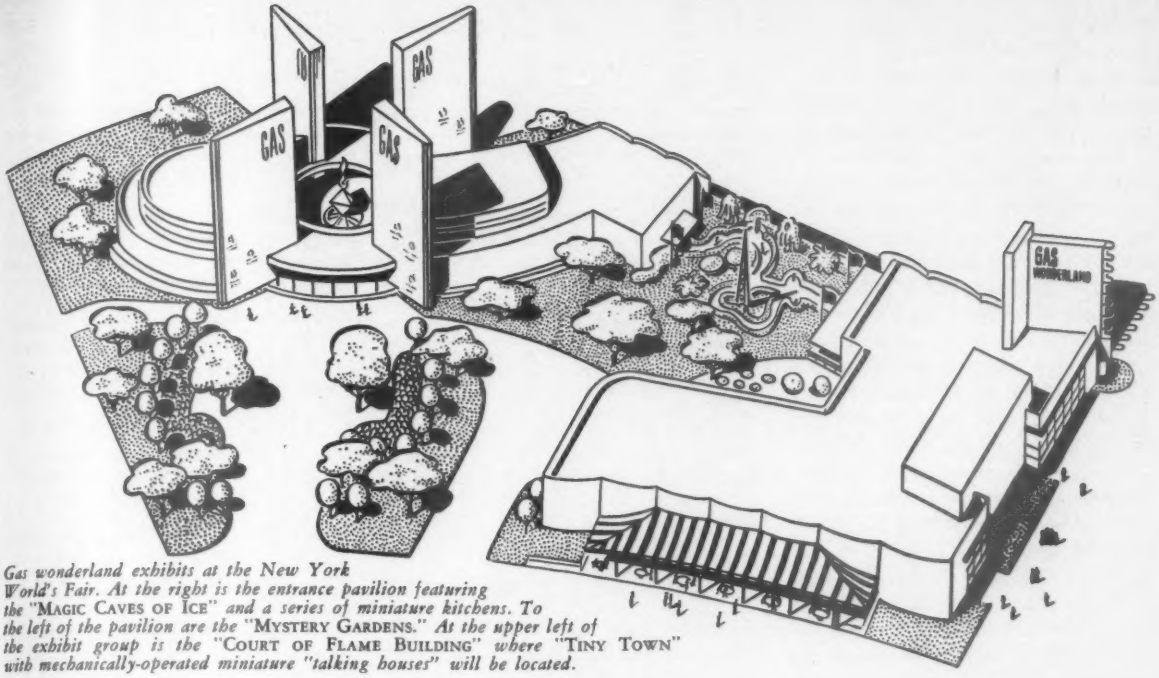
Water Heating Problem

Market surveys have clearly demonstrated that in some localities automatic water heaters are no longer used by the customers as such, but only at intervals in order to save gas. Increased efficiency will keep this as well as a study of the proper rate schedule. The gas industry probably suffers from some old-fashioned rate as compared with the more up-to-date promotional and objective rate in our fellow utility.

With all the competition we have in highly developed electrical appliances on the one hand, and mechanical equipment for using low-grade fuels on the other, a study of appliance sales shows the gas industry has held up fairly well, but a broader plan of dealer cooperation and time-payment sales will undoubtedly show results commensurate with the success some of our competitors have achieved. We certainly must be up-to-date in our sales methods or we will be left at the hitching post.

In 1926, gas stoves were awkward black things with no more insulation than the back of your neck, weighing some 750 pounds and about as attractive as a barn door. Today they look like a piece of boudoir furniture, weight cut in half, done in all colors of the spectrum and insulated so that you have to put your hand in the burner to know whether it is lit or not. And they sell like hot dogs at a political picnic.—MORGAN L. FITCH, President, Chicago Real Estate Board, Chicago, Ill.

Since we give the people what they want, we have used gas fuel in 92 per cent of the homes we have built in the last eight years. This year it will be used in all of the homes we will build.—R. W. BRAMBERG, R. W. Bramberg and Co., Builders, Oak Park, Illinois.



Gas wonderland exhibits at the New York World's Fair. At the right is the entrance pavilion featuring the "MAGIC CAVES OF ICE" *and a series of miniature kitchens. To the left of the pavilion are the* "MYSTERY GARDENS." *At the upper left of the exhibit group is the* "COURT OF FLAME BUILDING" *where* "TINY TOWN" *with mechanically-operated miniature "talking houses" will be located.*

Gas Wonderland . . . *A Dramatic Exhibit at the 1940 World's Fair*

By HUGH H. CUTHRELL

President, Gas Exhibits, Inc.

GREATER variety and more drama and picturesqueness will characterize the gas industries' displays at the New York World's Fair this year as a result of extensive changes to make the exhibit even more popular than it was in 1939. The exhibit will be called "Gas Wonderland," a name that was chosen to typify the progress made by the industry in creating gas appliances and equipment that have wrought significant changes in home life, in commerce and industry in recent years.

Though a few of the outstanding features of the 1939 exhibit which attracted thousands upon thousands of visitors last year have been retained, many new elements of showmanship in staging the gas displays for this year have been introduced.

The two-acre plot on which the exhibit is located will contain surprises and wonders which will delight both young and old, from the very moment they enter the entrance pavilion until they have passed through the exhibit. Two of the most unusual attractions for 1940 are the "Mystery Gardens" with their "singing" trees, and "Tiny Town" where the buildings "talk."

Once within the entrance pavilion facing the Fair's famous Avenue of Patriots, the visitor will have his first taste of exhibition magic when he is greeted by the "Disappearing Dwarf," a real human being of diminutive proportions who will perform a few comic antics and then suddenly disappear. The visitor will then pass through a short mirrored ramp at the end of which is a fountain. Presto, the dwarf appears and does another trick; he lights a gas flame through a solid column of water in the fountain and then disappears again, only to re-appear at the entrance.

Visitors will then be routed through the "Magic Caves of Ice," a popular feature of the 1939 set-up, which will be retained this year to demonstrate the history of refrigeration through a series of picturesque realistic dioramas, beginning with the cave men up to the present day of modern gas refrigeration.

The next display groups are designated as a "mini" basement and a "mini" kitchen which are so contrived that the visitors get their first view of them through "peep holes" along the corridor. Thirty persons at a time can get a view of the interiors which appear greatly reduced in size because they are seen through hidden lenses. By passing through the rooms after peeping at them visitors gain a perspective which will heighten their interest in the gas appliances with which

the rooms are furnished, these appliances being those which are so familiar to every one in the industry,—ranges, refrigerators, water heaters, house-heating and air-conditioning apparatus.

The so-called "mini" basement is a model utility and play-room decorated in a manner that would commend itself to the householder whose hobby was fishing. The floor covering is designed to represent a sandy beach with a rippling wave effect at the edges and a large star-fish design in the center. Under-water scenes form part of the wall decorations. In the "mini" kitchen all the various types of appliances that go to make up the ideal "all-gas-kitchen" will be found: a gas-operated refrigerator, a CP range, a modernistic sink, a breakfast nook, and a specially designed space-saving kitchen cabinet with an ingeniously devised revolving shelf which the housewife can manipulate in such a way as to bring any desired article in front of her merely by turning the shelf. Among the kitchen decorations will be photo-murals showing fields and gardens.

Mystery Gardens

When visitors have finished exploring the "mini" basement and the "mini" kitchen, they will pass onto a porch facing the Mystery Gardens in which a variety of entertainment will be offered to enliven the trip through the exhibit. The visitor will find many surprises as he walks through the gardens as the first flagstone on which he steps may cry out: "Don't step on me." Trees will "sing" and so will a bench under an umbrella tree when it is sat upon. Other oddities of this sort provided by the designers, of the exhibit will include a cactus plant that has flowers of flame,—a gas flame of course; statues that will drop out of sight in an instant while the visitor stands bewildered, and little gnome-like figures that spring out of the hedges, leering and speaking to the wondering beholder.

Another spectacular display, occupying nearly a third of the exhibit space, is Tiny Town, a typical American suburb in miniature, with its church, motion picture theatre, school, swimming pool, newspaper plant, factory, hospital, gas company office, and a number of shops, stores, and houses that range from the modest dwellings of those with low incomes to the small mansions of the well-to-do. On the outskirts of the village there will be a small farm.

A feature of Tiny Town is the apparatus which causes 21 of the buildings in the village to "talk," the voices to be heard simultaneously with an opening-up of the buildings—either by the roof's being automatically removed, or the front or sides falling down in such a manner that the interiors will be displayed.

As may be imagined, the interiors of the buildings in Tiny Town will reveal all the various types of gas appliances and gas equipment used in the home, in commerce, and in industry.

Gas Applications Shown

Some of the social and economic aspects of the use of gas to be shown by the exhibit include: the manner in which a newspaper plant can speed-up its processes by drying ink quickly; the increase of all-year-round employment in a candy factory; the provision of unlimited quantities of clean linen in hospitals; tempering the cold water in swimming pools; cooling of beverages and preservation of foodstuffs through refrigeration, and protection of garments in dress-making establishments. The use of gas for decorative illumination will also be shown.

Located in the Mystery Gardens are two other striking exhibits,—one a realistic diorama featuring the Marquis de Lafayette, famous as a general during the American Revolution, and the other a map showing the extensiveness of the natural gas areas in the United States.

Lafayette Diorama

The Lafayette diorama shows the celebrated Frenchman standing in the drawing room of a mansion at Fredonia, New York, which is a town noted in the annals of the gas industry for its early use of gas for lighting purposes. General Lafayette is seen standing in wonderment as he looks through a window at another mansion across the way which is illuminated with gas in honor of his presence in the town. The event depicted occurred during the visit made by Lafayette to the United States in 1825.

The natural gas map is laid horizontally in the gardens. It is constructed of terrazzo marble, with the individual states represented by different colors, and will show the natural gas distribution system throughout the nation. A high spot of the display will be a model of a gas well in Texas. Nearby, visitors will see an operating model of a derrick used in natural gas districts.

Another new feature of the 1940

Tie-In for 1940 Fair Offered

AN eye-appealing advertising insert showing the entrance to the gas industries' exhibit group at the 1940 New York World's Fair against a background of the exposition's famed perisphere and trylon has been prepared in matrix form and distributed to gas utility and combination companies throughout the country from the headquarters of Gas Exhibits, Inc. in New York.

The insert, which is suitable for newspaper and magazine advertisements, is two and three-quarters inches in height and one and one-quarter inches in width. At the top of the illustration appear the words, "1940 NEW YORK WORLD'S FAIR" and below, "VISIT

GAS WONDERLAND."

In a memorandum which was sent along with the mat insert it was stated: "If you could, at least from time to time if not continuously, include the small mat insert in your local advertisements, it would prove a most practical way of keeping 'Gas Wonderland' within the attention of your local newspaper readers and prospective Fair visitors. We hope to keep this symbol with its brief message constantly before the American public."

Additional copies of this promotion piece may be had free of charge by writing to Gas Exhibits, Inc., Room 1631, 4 Irving Place, New York City, the memorandum further stated.

set-up is a deep kaleidoscopic pool with a glass bottom in which multi-colored fish without heads and tails, fish with many heads and tails, plants that change color and shape, fantastic forms and combinations of design will be seen in the pool below and reflected in huge mirrors overhead, the reflectors being those that form the lower sides of the gigantic mirrored cube resting on one of its corners that was an object of curiosity and interest last year.

As was the case last year, a large and comfortable restaurant will occupy part of the exhibit space, all of the food to be prepared with the aid of gas for cooking and refrigeration. Patrons may eat indoors, on a tree-shaded patio or on a canopied terrace.

The four conspicuous 90-foot pylons within what was called last year the "Court of Flame" will be retained. These pylons are colored yellow, but at night they will be swathed in gas light. The gas flame torch from the upper corner of the giant mirrored cube will still be a feature of its night-time lighting, the entire group of buildings being illuminated at night by high-powered gas flood-lights. A huge fin-like superstructure above the entrance pavilion bearing the words "Gas Wonderland" will guide visitors to the exhibit.

The facilities of the popular "Court of Flame" Club, which was a feature of last year's exhibit group, will again be available to those connected with the gas industries.

"Gas Wonderland" is the idea of Richard Pond, director of displays of the well-known advertising firm, Batten, Barton, Durstine & Osborn. Skidmore & Owings, John Moss Associate are the architects and the firm of Burdette Baxter Gilmore are the design engineers.

Flares Disappear

AFTER many years' continuous burning of invaluable quantities of natural gas, the flares which could be seen for many miles around Longview and Royalties, Alberta, Canada, are now a thing of the past. The Alberta Conservation Board, appointed some three years ago, considered this a waste of one of Canada's valuable natural resources, and took steps which finally ended in stopping this practice.

Michigan Gas Sales Jump 10.16%

IN its annual report to stockholders, issued March 11, the Consumers Power Company, Jackson, Michigan, called attention to the company's vigorous business-building program which resulted in substantial sales increases, reversing the decline reported the previous year. The gas side of the picture is especially favorable, with total sales amounting to 9,244,337,700 cubic feet, a gain of 10.16 per cent over 1938. Gas customers totaled 201,302 at the end of 1939, a gain of 6,194 for the year.

Industrial and commercial operations recorded a gain of 24.15 per cent. Gas house heating sales showed the impetus of several years' promotion in a 21.69 per cent increase.

Under "new business activities," the report lists 2,293 new house heating installations, bringing the total to 12,449 at the end of the year. A new trial plan on a Spring-Fall gas unit for between-season furnace heating was put into effect for those customers who do not desire regular year-'round gas heating installations. This appliance consists of a portable burner to be used in the present furnace for early Fall and late Spring use. Four hundred sixty-one such units were successfully installed during the year. The program will be continued, it was stated.

Beauty and Utility Combine in Kitchen Set-Ups

Gas ranges add to the attractiveness and desirability of these two kitchen illustrations which appear in featured advertisements of the Armstrong Cork Company scheduled for the April issues of American Home, Parents' Magazine, Good Housekeeping *and* Better Homes & Gardens. *The expert hand of Hazel Dell Brown, interior decorator of the Armstrong Cork Company, is seen in the original design of the two kitchens. The gas industry's national advertising campaign will make use of one of the floor coverings in an advertisement scheduled for late Spring use*

Why a National Advertising Program on Automatic Gas Water Heating?

H. N. Ramsey

By H. N. Ramsey
Welsbach Company,
Gloucester City, N. J.

THE fundamental purpose of the A. G. A. National Advertising program is founded on the simple desire to increase the volume of our business. Clearly this can be accomplished by either or both of two ways—first, increasing the number of customers on gas company lines and second, increased use by existing customers. It is this latter means which seems to me to offer the greatest potential possibility for increased business.

Figure 1 illustrates what has been taking place in the annual use per domestic customer of manufactured and natural gas during the past few years. From 1929 to 1939 the annual use of manufactured gas had declined more than 25% and even in the case of natural gas the reduction has been more than 16%. In that same period electricity use has increased 87%. This outstanding growth in the consumption of electricity cannot be considered as an absolute comparison in a competitive sense. There have been developed many new applications for electricity in the home for which gas cannot be used. Nevertheless, there is no doubt that a substantial part of the expanded use of electricity has been for purposes which could be as well or better served by gas.

In what manner is the A. G. A. National Advertising program working to promote increased use of gas by existing customers? Most of the advertising in general publications has been devoted to the promotion of the gas range. It must be conceded, however, that each time an old gas range is replaced by a modern one there is strong probability of decreased total use for cooking operations. This is due to the great improvement which has been

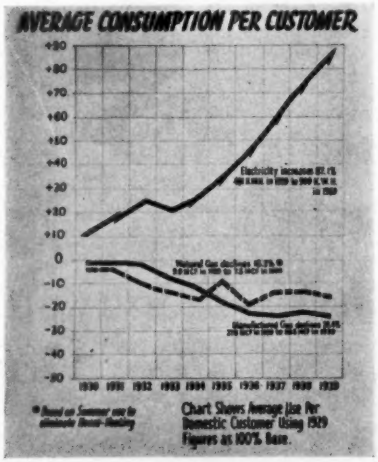


Figure 1

brought about in the efficiency of the modern gas range to meet the demand of the buying public.

It is the feeling of many in the gas industry that in order to save the domestic load all effort must be concentrated on emphasizing to the public the advantages of gas for cooking. I do not for a moment dispute the value of the domestic cooking load to the gas industry, but by no means do I subscribe to the theory that the salvation of the domestic business rests solely in the promotion of the gas range. There was a time within the memory of some who are here today when it was felt that the domestic gas load, in fact the entire industry, depended almost entirely upon the gas lighting business. Now we find the industry larger than ever in spite of the decline almost to extinction in the use of gas for illumination.

If progress and change are not geared together the penalty is lost sales and ultimate failure.

In the home in which a range is the only gas appliance in use there exists a potential market for the sale of a gas water heater. It is likewise true that the installation of a gas water heater in that home will surely hold that customer and may even make him a prospect for a new gas range. Unless we promote to a greater extent the possibilities of gas service in the home for purposes in addition to cooking we are failing to take fullest advantage of the versatility of our fuel.

Capitalizing on Versatility

What has been said is not intended to be critical of the fine work which has been accomplished thus far by the A. G. A. National Advertising Program but is rather for the purpose of calling to your attention the importance of devoting a greater proportion of our energies to the promotion of gas fuel for other domestic purposes. I cannot escape the conclusion that the very nature of the present program is defensive. In order to accomplish the broad purpose of promoting the gas industry we must take utmost advantage of all of the possibilities which it offers.

I doubt if anyone present here today, or for that matter anyone connected with the gas industry, will question the statement that the greatest possibility of increasing the domestic gas load is through increased sales of automatic gas water heaters. I need not review at length at this time the specific advantages to the gas business resulting from the addition to its lines

Presented before Mid-West Gas Sales Conference, Chicago, February 12.

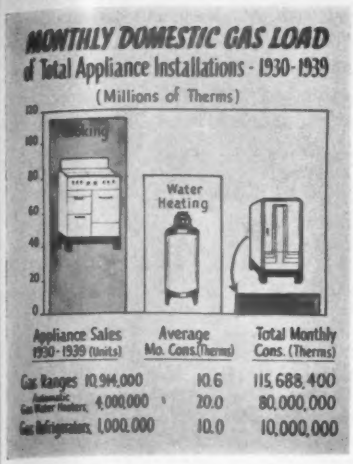

MONTHLY DOMESTIC GAS LOAD
of Total Appliance Installations - 1930-1939
(Millions of Therms)
Cooking
Water Heating
Appliance Sales 1930-1939 (Units)
Average Mo. Cons. (Therms)
Total Monthly Cons. (Therms)
Gas Ranges 10,944,000 10.6 115,688,400
Automatic Gas Water Heaters 4,000,000 20.0 80,000,000
Gas Refrigerators 1,000,000 10.0 10,000,000

Figure 2

of the automatic water heater. Its features of year 'round use at high load factor and the trouble-free service which it provides to the customer are all well known to this audience. Nevertheless the general lack of public acceptance for this appliance and the energetic competition with which it is confronted result in the automatic gas water heater being probably the most difficult of all gas appliances to sell.

Water Heating Load

In Figure 2, for example, is shown in graphic form the estimated domestic load resulting from the sales of ranges, water heaters, and refrigerators during the past ten years. In that period there were sold nearly 11,000,000 ranges, 4,000,000 water heaters, and 1,000,000 refrigerators. You will note that the average monthly gas use by the automatic water heater is practically twice that of the range or the refrigerator. The sale of a refrigerator, however, is practically always new load, in most cases the automatic water heater contributed new or added load, but in so many instances the range merely replaces a less efficient appliance and in such cases there actually results a reduction in gas sales. Although the calculated monthly use by these appliances is not all new load, I do wish to point out that the automatic gas water heater is responsible for approximately 39% of the total.

Yet what is now being done in the field of national advertising to increase the acceptance and use of the automatic gas water heater? The answer is, very little. The refrigerator is aggressively advertised both nationally and locally—this also holds true for the range which is further supported by the principal emphasis in the A. G. A. National Advertising Program. Is it not high time that we turned our thoughts and some of our money to the national advertising of automatic gas water heaters?

At this point I would like to speak briefly regarding competition. One of the big problems facing the gas industry is the fact that there are so few gas appliance manufacturers whose volume of sales permits expenditures of advertising money on a national basis. There are many electrical appliance manufacturers who can and do spend large sums for national advertising.

Advertising Ratio

Figure 3 shows the outlay for national advertising of all gas and electric equipment appearing in the Curtis publications alone in each of the last three years 1937, 1938 and 1939. The aggregate for the three-year period for gas equipment amounts in round figures to $900,000—that for electric equipment $9,900,000 or more than ten times as much. It is safe to say that this same ratio would probably hold true in any other general list of magazines.

While some of these figures may be familiar to you, I am re-emphasizing them here today becouse they are the crux of this whole situation. If the gas industry is to hold and improve its position in the public mind, there must be more advertising regarding all gas appliances and their benefits to the consumers.

We in the gas industry must realize that it is not only necessary for us to meet competition with improved appliances and improved sales methods, but we must also compete for public acceptance against the kind of advertising expenditures that I have shown. One of the troubles of the gas industry is that we have been too long on the defensive, when, knowing the superiority of our products, we should really be on the offensive.

Manufacturers of gas water heating equipment are fully aware of this condition. In order to promote increased sale of their product through gas companies and dealers they have in the past four years cooperatively expended more than a quarter of a million dollars on promotion. This has been in the form of contests for salesmen, dealers, and gas companies, direct mailing, and publicity. Most of this effort, however, has been expended within our industry and we have not even scratched the surface in breaking down the barriers of resistance in the minds of prospective customers. Until some means is found of effectively carrying to the general public the message of the desirability and economy of heating water for domestic purposes by gas we shall never achieve the sales results and load building possibilities which should be ours.

Whenever the subject of national advertising for gas water heating

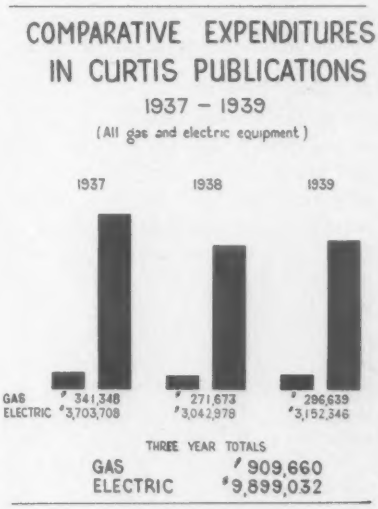


Figure 3

equipment is brought up the question always arises of how to raise sufficient funds to carry through an adequate program. The individual manufacturer of water heating equipment cannot afford to devote any substantial sum of money for national advertising.

A few months ago a plan was developed for a national advertising program on behalf of automatic gas water heating equipment in general to be sponsored and paid for entirely by the manufacturers. It called for advertising throughout 1940 in leading general and women's magazines, including those used by the A. G. A. with a com-

bined circulation of approximately 20,000,000. With the ten insertions contemplated it would have been possible to issue during the year, with a reasonable degree of continuity, a total of 200,000,000 messages to the American public on the advantages of automatic gas hot water service for the home.

The advertisements were to be timed to coincide with the American Gas Association program and also the national advertising of three or four of the larger manufacturers of gas appliances. In that manner each of the messages on the use of gas for water heating would be fortified by the presence of other gas appliance advertising in the same issue. Thus each advertiser would secure the added advantage of the presence of the others to the unquestioned benefit of the industry as a whole. Experienced advertising men tell me that under such circumstances each advertiser secures more for his advertising dollars than by almost any other means.

A Timely Program

I have given you some of the details of this plan which, although not carried into operation, shows the possibilities of what might be done. I am personally convinced that this plan suggested last fall was worthwhile and had every opportunity of success if put into operation. If it is sound for the American Gas Association to spend the money that they are spending in these national magazines, certainly it is equally sound to advertise the automatic gas water heater in the same way.

It seems to me that with all of the factors involved, there was never a more opportune time to nationally advertise automatic gas water heaters. Particularly is this true with the nation-wide residential building program that is already in progress, much of which is being carried on by Federal financing. We all know how important it is that when these homes are built they become gas homes. If gas does not go in then, the chances are that it never will.

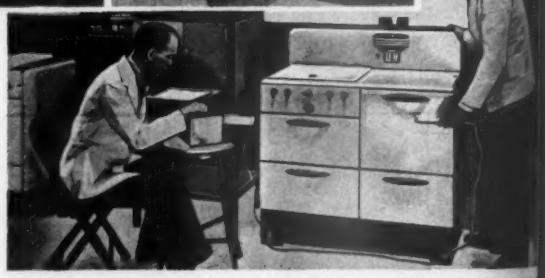
In the year just passed there were sold in the United States more than 400,000 automatic gas water heaters. Although this is a substantial increase over 1938 it could have been 50% greater if the product had been adequately promoted to the public. We have no means of knowing the present saturation of automatic gas water heaters on our lines but we do know that it is relatively low. With the potential market of some millions of gas users who today do not enjoy automatic gas hot water service, combined with the thousands of new homes which are being constructed in all parts of the country, the manufacturers of gas water heating equipment and the suppliers of gas fuel have a most attractive prospect for the sale of their respective products.

I propose that the manufacturers of gas water heating equipment and the gas utility companies combine their efforts to raise an annual fund of $200,000 for the purpose of nationally advertising this product. It will pay big dividends by increasing that domestic load which is so important to the gas industry. In my opinion, this type of program has been put off too long. We're in business and can't afford to stand still. We have everything to gain by putting such a plan into operation. We have much to lose if we do not.

Natural Gas Called Answer to Prayer

IN a broadcast address from Austin February 16, W. R. Woolrich, Dean of the Bureau of Engineering of the University of Texas, stated that the reserves of natural gas in that State total 50 trillion cubic feet. Dean Woolrich described natural gas as "the answer to an industrial prayer—a fuel which requires no storage space, fires instantaneously and burns with the minimum of waste." He further predicted that when the supply of natural gas which the present generation uses is exhausted the generations of the future can be supplied from the reserves of 23 billion tons of Texas lignite.

RIGID LABORATORY TESTS PROVE GAS APPLIANCES CAN TAKE IT



Left above—cookie test for oven heat distribution. Right above—artificial steaks indicate broiler heat capacity accurately. Above—surface temperature test determines effectiveness of insulation

Industry's Approval Seal Stands for Efficiency, Safety, Durability.

ASBESTOS "chops" broiled in a gas range . . . manufactured winds aimed directly at top pilot lights . . . a mechanical nose that's keener than the human sense of smell . . . solitary confinement for a room heater operated for hours in an air-tight steel chamber with a detective apparatus outside . . . a curious but delicate instrument sleuthing the heat units generated by a gas furnace or a water heater to detect any which escape. . . .

These—and hundreds more are the ways and devices of tests—strange to the mind of the layman—carried on in the gas industry's testing and research laboratories where gas appliances designed for household use are put through their paces in the scientific mill to assure construction and operation in accordance with established national standards. To take it, the [illegible] a seal of

proved. And more than 95 per cent of the gas equipment sold today throughout the United States and Canada carries the seal [illegible] of the American [illegible] testing laborato[illegible]

is sturdy. The range is tested as a whole, and all parts are examined separately. It must boil and bake and broil without a hitch—and that means positive and precise temper[illegible]; every square inch of the [illegible] oven surface [illegible] prove the insu[illegible] or [illegible]

easily as those parts of the [illegible] designed to be taken apart [illegible] tate cleaning. More than that, [illegible] operates economically.

And so it goes with other [illegible] ances. Engineers check for [illegible] value" of a radiant [illegible] are the purchaser [illegible] of the "[illegible]

Above is an illustrated feature article on the Association's Testing Laboratories for publication in local newspapers in one or more of the following forms: As editorial matter, a special gas appliance supplement; as paid advertising matter, or as a news story. The story is available in mat form, free of charge, from the Association

Community Spirit . . . *New A. G. A. Committee Urges Civic Participation*

H. C. Thuerk

PREDICATED on the results of surveys conducted in several large cities throughout the country which disclosed that a large percentage of those consulted believe that the gas company does not participate in civic affairs and community development as actively as do competitive organizations, the Commercial Section of the American Gas Association created a new committee on Community Development and appointed H. C. Thuerk, general manager of sales of The Utility Management Corporation, as chairman.

Affiliated Representatives

Invitations have been extended to the executives of the affiliated associations throughout the country to appoint representatives as members of the committee. At the present time the personnel of the committee consists of the following:

C. V. Sorenson, Northern Indiana Public Service Co., Hammond, Indiana—Representing Indiana Gas Association.

Dean W. Flowers, General Manager, Michigan Consolidated Gas Co., Muskegon, Michigan—Representing Michigan Gas Association.

W. J. Barber, Assistant General Manager, Metropolitan Utilities District, Omaha, Nebraska—Representing Mid-West Gas Association.

George Hawley, President, Bridgeport Gas Light Company, Bridgeport, Connecticut —Representing New England Gas Association.

E. J. Menerey, President, Peoples Gas Company, Glassboro, New Jersey—Representing New Jersey Gas Association.

F. M. Banks, Vice-President in Charge of Sales, Southern California Gas Co., Los Angeles, California—Representing Pacific Coast Gas Association.

W. L. Hutcheson, Merchandise Sales Manager, The Manufacturers Light & Heat Co., Pittsburgh, Pa.—Representing Pennsylvania Natural Gas Men's Association.

B. T. Franck, Vice-President, Milwaukee Gas Light Co., Milwaukee, Wisconsin—Representing Wisconsin Utilities Association.

F. X. Mettenet, Vice-President, The Peoples Gas Light and Coke Co., Chicago, Ill.—Representing Illinois Public Utilities Association.

Since several other associations have indicated an interest in appointing representatives on the committee, it is expected that the personnel of the committee will be increased during the next few months.

As a result of preliminary organization meetings and a meeting of the committee in Chicago on February 16, it was decided that for the present Association year the committee would direct its activities toward bringing to the attention of member gas companies the need for and the value of more active interest and participation in civic activities of the communities served. This is being done through the medium of talks before the annual meetings and conventions of several of the affiliated gas associations.

Addresses Urge Participation

B. T. Franck of the committee presented a talk on the value of community development activities before the annual meeting of the Wisconsin Utilities Association on March 11, and Mr. Thuerk presented a similar talk before the annual meeting of the New England Gas Association in Boston on March 14. Mr. Thuerk is also scheduled to give addresses on Community Development before the Natural Gas Section Convention in Houston on May 7 and before the Indiana Gas Association at Evansville, Indiana, on May 14. F. M. Banks, who represents the Pacific Coast Gas Association on the committee, has accepted an invitation to address the joint meeting of the Canadian and Pacific Coast Gas Associations at Jasper Park, Alberta, on July 3. The Michigan Gas Association is also planning for an address on Community Development at its meeting in July.

Some time in April it is planned to hold a meeting of the committee probably in New York, for representatives of the associations in the eastern part of the country. It is hoped that as a result of this meeting and the one held in Chicago in February, recommendations can be made for a tentative program for the committee for the coming association year. The committee is collecting the experiences of utility companies who have taken an active part in community development activities and hopes to publish summaries of these experiences in the A. G. A. MONTHLY as they become available.

Developing Civic Consciousness

In discussing the work of the committee, Mr. Thuerk brought out the thought that more active participation in the development of the communities it serves would probably contribute materially to the efforts of the gas company to meet successfully active competition for its services and to keep operating expenses from increasing faster than sales. He pointed out that the participation of a gas company in community and civic activities will indicate its willingness and desire to strive for better citizenship. Since many people feel that there is a correlation between public acceptance of a company and the consumption of gas, it is reasonable to believe, all things being equal, that if the company is generally recognized as being a good citizen, a prospective fuel purchaser will be inclined to favor gas over other fuels.

Active participation by the gas company in a community development program will tend to develop a greater civic consciousness in the minds of its employees which will tend to make for more effective and economical municipal and civic administration. Assist-

ance in the promotion of the industrial growth of communities will make it possible to bring attention to the need for keeping taxes low if industries are to be retained and new ones attracted. These are but a few of the results which are possible from participation in a community development program.

The committee is anxious to enlist the cooperation of all gas companies in obtaining the experiences of utility companies in community development activities. Outlines of several such activities have already been made available to the committee and will be furnished to companies requesting them.

Report on Purging of Gas Piping and Gas Apparatus

THE special committee appointed by the Executive Board to prepare a recommended procedure for purging gas piping and gas apparatus has completed its task. A 40-page brochure, complete with drawings, diagrams and numerous references is now available (50¢ to members and $1.00 to non-members of the American Gas Association).

The report is not an operating code; it is a description of methods of procedure found by experienced operators to be safe and effective as demonstrated by actual practice.

The first recommended purging procedure dealing with gas holders was initiated late in 1927 under the direction of Colonel Oscar H. Fogg, then president of the Association and Walter C. Beckjord, then chairman of the Technical Section. The chairman was John B. Klumpp, then vice-president of The United Gas Improvement Company and a former president of the Association. Prepared by a representative committee of experienced operating engineers, the first report was accepted by the Executive Board, October 14, 1929, and received wide acceptance in the industry.

Holder Report Revised

As further experience was had, additional technical knowledge gained and new testing and inert gas production equipment became available these developments necessitated revision of the report. The late Herbert W. Alrich of the then Consolidated Gas Company of New York and a member of the original committee, was appointed chairman. The new report was accepted by the Executive Board and published March 15, 1933, and dealt, as did the first report, only with gas holders.

The committee thereupon proceeded to carry out the further instructions of the Executive Board and began work on a purging procedure for equipment other than holders, and including piping. Due to the most regrettable loss, by death, of Mr. Alrich the president again called Mr. Klumpp, now a Philadelphia consulting engineer, into service as chairman and under his direction the work was speedily pushed to conclusion.

The Association and the industry owe a deep debt of gratitude to the committee and its numerous technical advisors in carrying through, over a long period of years, the necessary engineering studies and tests which are essential in preparing a suggested procedure to conduct certain operations in such a manner as to prevent the formation of explosive mixtures within gas works apparatus and piping. The committee personnel, some of whom have served from 1927, follows:

John B. Klumpp, Philadelphia, Pa., chairman; A. M. Beebee, Rochester Gas & Electric Corp., Rochester, N. Y.; John H. Braine, The Brooklyn Union Gas Company, Brooklyn, N. Y.; P. T. Dashiell, The Philadelphia Gas Works Co., Philadelphia, Pa.; L. B. Eichengreen, Philadelphia Electric Co., Philadelphia, Pa.; A. D. Greene, United Gas Pipe Line Co., Houston, Texas; E. L. Griffith, Consolidated Edison Company of New York, Inc., New York, N. Y.; Karl B. Nagler, The Peoples Gas Light & Coke Company, Chicago, Ill.; D. S. Reynolds, Boston Consolidated Gas Company, Boston, Mass.; L. J. Willien, Public Utility Engineering & Service Corp., Chicago, Ill.; J. G. O'Keefe (deceased), Public Service Electric & Gas Co., Newark, N. J.; John A. Clark approved; A. Gordon King, American Gas Association, New York, N. Y., secretary.

Another Industry To Adopt CP Program

THE February issue of *House Furnishings Review* reports the rapid progress of the washing machine industry's $300,000 national promotion for a proposed Certified Washer Program. The latest plan, although not yet unanimously approved, suggests, "Washing machines which pass certain requirements as set forth by the American Washer and Ironer Association and approved by the Electrical Testing Laboratories, New York, could bear the association's label as a 'life-test washer.'"

Editorial comment on the proposal says, "This campaign is modelled on the same principal as the Certified Performance gas range cooperative campaign which has been so successful and which has renewed its appropriation for 1940."

Gas Sales Show 18th Consecutive Rise

Marcy L. Sperry

THE year 19 was the eigh eenth consecuti year in which t volume of gas sol by the Washingt Gas Light Co pany, Washingto D. C., and its sub sidiaries increas over the preceding year, Marcy L Sperry, presid points out in t company's annu report. This development, the repo shows, is related to the growth of popul tion in the territory served and is als influenced by the increased public acce ance of gas for house heating and r frigeration, together with the continue use of gas for cooking and water heati by the great majority of new home owne

During 1939, in which total gas sal rose 9%, approximately 20,000 new g ranges and 10,000 new gas water hea were installed on customers' premises the company and its subsidiaries, and appliance dealers. More than 4,500 g operated refrigerators were connected d ing the year, making a total of 28,0 such installations. There are approxima 21,000 gas space-heating installations use throughout the system.

Since the total number of custom served is approximately 175,000, gas used for refrigeration by about 16 p cent and for heating by about 12 per c of the total number of customers, a cording to the report.

Total Gas Sales Up in New Jersey

SUBSTANTIAL gains in all branches the gas department except domes were registered in 1939 by the Pub Service Corporation of New Jersey, cording to the annual report of the co pany's operations. Total cubic feet of g sold to customers showed an increase 3.94 per cent over 1938. Gas meters service at the end of 1939 totalled 8 763, a net gain of 12,693.

While sales to residential custom other than house heating, decreased 1 per cent from the previous year's to industrial and commercial sales of g increased 18 per cent over 1938. Gas sa for building heating continued in 19 their record-breaking progress. Th were sold for this purpose 2,943,98 cubic feet, or 26.51 per cent more th the preceding year. During 1939 bui ing heating installations increased 2.2 There were on the mains at the end 1939, 10,620 building heating instal tions.

Gas Refrigeration . . . *What It Offers in the Commercial Field*

By C. J. CONKEY

Servel, Inc.

THE first water-cooled commercial gas refrigerating unit of 500 lbs. I.M.E. capacity was introduced to the gas utilities in October 1936 at the annual A. G. A. Convention at Atlantic City. Since that time we have produced and sold a number of additional units of 650 lbs. and 1000 lb. I.M.E. capacity.

The gas control, originally thermostatically controlled, was redesigned to function as a refrigerant-pressure-actuated gas control. This control has proven entirely satisfactory. As we use no expansion valves to drop the refrigerant pressure and obtain cooling at the point of use, but rather establish the final refrigerant pressure in the gas-operated unit itself, it is necessary to insulate the cold liquid lines running from the gas-operated unit to the boxes or other fixtures to be chilled. Insulating material has been improved and reduced in cost from 52c per foot to 27c per foot. This is important in view of the fact that commercial refrigeration is generally "remote" refrigeration so that the unit itself can be located in the basement or elsewhere 10 to 50 feet or more from the actual fixtures to be cooled. Installation methods and technique have also been improved as evidenced by the fact that we installed 50 units in 1937, 100 in 1938 and 150 in 1939.

The following gas companies have installed 6 to 60 units:

Boston Consolidated Gas Company
Brooklyn Borough Gas Company
Kings County Lighting Company
The Philadelphia Gas Works Company
The Brooklyn Union Gas Company
The East Ohio Gas Company
Atlanta Gas Light Company
Laclede Gas Light Company
Michigan Consolidated Gas Company —Detroit
Michigan Consolidated Gas Company —Grand Rapids
Milwaukee Gas Light Company
The Peoples Gas Light and Coke Company
Houston Natural Gas Company
Southern California Gas Company

The value of commercial gas refrigeration, as stated in Interim Bulletin 1CR "Penetrating the Commercial Refrigeration Field," published by the Commercial Refrigeration Committee of the Industrial Section A. G. A. 1939, is as follows: "It opens up a new field of gas sales and assists in the expansion and retention of load in older gas applications. It has ideal load characteristics. Also greater acceptance of domestic gas refrigeration and sales of domestic sizes will result from effort expended in this field."*

Replacement Market a "Natural"

THE MARKET (where commercial gas refrigeration can be sold) is indicated on Page 5 of Interim Bulletin 1CR. Nationally, we have a market of about 500,000 business establishments requiring commercial refrigeration, possibly 70% of which are already using mechancial refrigeration. However, the replacement market is a "natural" for us, as low maintenance cost is one of our strongest selling points. By reference to N.E.M.A. figures, we find 40,000 to 50,000 electric compressors sold annually, representing 60% of the commercial refrigeration market, are within the refrigerating capacity of our present line of three commercial gas units. With the advent of an air-cooled gas unit of less capacity than our present 500 lbs. I.M.E., we shall add another 20% to 25% to our present possible field of application, at present represented by about 15,000 compressors annually as reported by N.E.M.A. An analysis of your local market can best be made by reference to your local classified telephone directories.

THE ADVANTAGES TO USER of gas commercial refrigeration may be listed as follows:

1. Better refrigeration results.
2. Dependability of gas company service.
3. Prestige of selling agency—Gas Company permanent.
4. Low maintenance cost—Manufacturer's Service Agreement—4 years beyond the 1 year guarantee at a cost of $20.00.
5. Low operating costs where gas rates are competitive with electric rates.
6. User acceptance by household users of gas refrigeration.
7. Dependability of fuel delivery.
8. Quietness.
9. Safety.
10. Initial Cost—usually high but justified when presented on an annual basis.

Promotional Methods

THE METHODS to be employed to promote the sale of commercial gas refrigeration will vary considerably with conditions prevailing in each particular area. However, there are certain definite practices that have been evolved as a result of sales activities of a number of gas companies during the past three years. The commercial sales department of the gas company is generally assigned to promote the sale of commercial gas refrigeration. The entire personnel can be trained by factory commercial sales engineers to solicit and complete surveys. At least one member of the commercial sales department should be assigned as the specialist to act as the closer for the group. This man should have previous electrical

Paper presented before the New England Gas Association, January 26, 1940.

*Interim Bulletin 1CR "Penetrating the Commercial Refrigeration Field" is available at American Gas Association headquarters, 420 Lexington Ave., New York, N. Y.

commercial refrigeration experience. It has been found advantageous to work closely with one or more refrigeration fixture manufacturers or agents.

OPERATING COSTS are dependent upon local characteristics of gas and prevailing rates. Gas consumption expressed in therms per month are as follows:

	CH-502	CJ-652	CJ-1002
Winter	40	50	75
Summer	80	100	150

You will note that the send out is ordinarily twice as great during the summer months as during the winter months, which is a decided advantage in improving your load factor. Gas consumption expressed in therms, based on an average per month winter and summer through any 12 months' period will be as follows:

CH-502	CJ-652	CJ-1002
61	72	112

Average annual consumption: 1000 Therms.

The average water consumption per month during any 12 months' period is dependent upon summer water temperature, but for New England our experience to date would indicate that figures would be somewhat as follows:

	CH-502	CJ-652	CJ-1002
Gallons	15,500	19,500	28,000
Cu.Ft.	2,000	2,600	3,700

For comparative operating costs with electric commercial equipment, the calculated ratio of one therm being equivalent to 4 kilowatt hours may be used.

The requirements for a gas utility to undertake the sale of commercial refrigeration may be briefly outlined as follows:

1. Personnel. It is essential that at least one member of your Commercial Department specialize on commercial gas refrigeration, so that he can direct the efforts of the rest of the department, who can be trained to make surveys and turn in leads to be followed up by the specialist. We believe it important that each member of the Commercial Department be instructed to turn in two surveys each week.
2. Installation of the gas, water, drain and flue can be handled on a flat charge basis by a plumber or the utility. The secondary system, however, should be handled by the utility or qualified refrigeration contractor. Service should be handled by the utility, for gas company service is one of the strongest selling appeals and low maintenance costs are possible. The manufacturer's 4 year service agreement makes low maintenance costs possible.
3. Stock. It is essential that a minimum of one unit of each size, together with replacement units and a few controls, be carried in stock. This amounts to only $1400.00, so it is a small inventory investment.
4. It is essential to be competitive in operating costs with similar electric commercial refrigeration equipment. This requires qualifying gas commercial refrigeration in some rate schedule which, doubtless, already exists in your organization. We know that, for instance, the heating rate ordinarily offered is one which will be competitive with commercial electric rates for the purpose of commercial refrigeration and that such a rate exists in any gas company organization.
5. To properly support your sales department's activity, it is essential to have a satisfactory cooperative selling plan with some local refrigeration fixture house.

Conclusion

We can recommend the sale of this product to any gas company where conditions warrant sales activity and shall welcome an opportunity to assist any gas company to analyze its own market opportunity for its sale.

Two $50.00 Prizes Announced for Gas Course Students

A PRIZE of $50 will be awarded by the American Gas Association to the student completing the home study course on American Gas Practice offered by Columbia University and to the student completing the home study course on Natural Gas offered by the University of Kansas during the year from September 1, 1939, to September 1, 1940, and attaining the most comprehension of the subject matter.

These two substantial cash prizes are being offered by the Committee on Personnel Practices of which H. L. Donaldson of The Equitable Gas Company of Pittsburgh is chairman. The money for these prizes is made available through the Trustees Gas Educational Fund administered by the American Gas Association.

Selection of the recipients will be made by the educators conducting the courses—Professor Jerome J. Morgan for the Columbia University course and Professor C. M. Young for the University of Kansas course. Both courses are sponsored by the American Gas Association and are supervised by advisory committees made up of eminent gas engineers appointed by the Association. The arrangement has proved to be ideal and the courses have met with universal satisfaction.

The course on American Gas Practice offered by Columbia University is divided into two parts. Part I treats the production of manufactured gas; Part II deals with the distribution and utilization of gas.

The course on Natural Gas offered by the University of Kansas covers the entire field of natural gas, from origin to utilization.

Detailed information on these two home study courses, enrollment in which can be made at any time, will be gladly supplied by the Association.

The purpose of these prizes is to stimulate the interest of the younger men in the gas industry to acquire more knowledge so that they may increase their value in their present position and be afforded greater opportunity for advancement in the future.

Similar prizes were awarded last year, the successful students being Marden E. Cobb of the Republic Light, Heat & Power Company, Inc., Buffalo, in the Kansas Natural Gas course and Chester Rawlings Mathes of The Brooklyn Union Gas Company in the Columbia course.

New Gas Well

A NATURAL gas well in an abandoned stone quarry on the edge of Elmira, N. Y., brought in a flow on March 13 which Charles E. Fralich, geologist of the Belmont Quadrangle Co., Bradford, Pa., estimated will develop into 10,000,000 cubic feet daily.

Mr. Fralich said the well, which came in at a 60,000 cubic foot flow at a 3,000 foot depth, is the first in Chemung county to produce. John Thompson of Bradford, company secretary, said the full flow will be tested.

House Heating . . . *1940 Program Attacks Major Competitive Problems*

J. G. Tooker

FOR a number of years past, the annual statistics on the use of gas for house heating have shown substantial increases. This sharp rise in the gas sales curve for house heating has continued this year unabated; in fact, so far sales have outstripped any previous year, due in part to the unusual cold weather throughout the country. It is safe to assume therefore that gas is rapidly gaining momentum as an ideal fuel for this purpose. Thus the national picture of the house heating market is a bright one for the gas industry and it remains for us to make the most of our opportunities.

The 1940 House Heating and Winter Air Conditioning Committee of the Commercial Section has the general objective of analyzing this market and aiding its promotion on a unified national basis. So far this year the committee has held two comprehensive meetings at which it laid down a definite program for accomplishment during the year. The program is divided into five subjects each of which is in the hands of a capable subcommittee. It is the purpose of this article to outline the scope of the work which is being undertaken.

Lyle Harvey once said that there were no new selling developments under the sun. The oldest and best one to use, in his estimation, is "good horse sense and hard work." This applies not alone to sales but to committee work or any other activity. It seems certain that the annual reports on the house heating studies this year will reflect Mr. Harvey's philosophy. Here is the program as it has been set up under the five subcommittees:

By J. G. TOOKER

Chairman, House Heating and Winter Air Conditioning Committee, American Gas Association. New Business Manager, The Gas Service Co., Wichita, Kansas

Subcommittee on "Program To Insure Better Heating Equipment and Installation Practices," B. H. Wittman, Chairman

This committee is working on recommendations to be submitted for a national program on CP Househeating Installations. These recommendations will be submitted in the very near future for approval. It is felt that the adoption of such a program for national promotion will meet with the hearty support of manufacturers of equipment and will eliminate many bad practices now in existence and will be of material assistance in the promotion of gas for house heating purposes.

Subcommittee on Floor Furnaces, W. M. Jacobs, Chairman

The program of this committee for the ensuing year has as its objective particularized sales aspects of floor furnaces. The scope of work proposed has been divided into two parts—Effective Sales Methods, and Installation Recommendations and Technical Aspects.

Sales methods used by utilities, dealers, and manufacturers have been modified to meet conditions which differ with mild climates and cold climates and between natural and manufactured gas territories. The committee members, because they are located in different parts of the country, will have an opportunity to analyze and report the degree of success of floor furnace sales in their respective territories and to make recommendations on more effective sales procedures.

W. M. Jacobs

It is felt that some sales agencies have ceased to promote sales on the floor furnaces because of unfortunate past experiences with these appliances. Proper installation, correct location, and adequate sizing will eliminate a majority of these objections. Special study will therefore be given to the following aspects of this problem:

1. Comparative effectiveness of single floor furnace installations and multiple installation of smaller floor furnaces.
2. Consideration of installation location with respect to house plan and prevailing winds.
3. Analysis of venting techniques, particularly in regard to installations in old homes.
4. Consideration of thermostatic control with respect to both mild and cold climates.
5. Consideration of special instructions to customers relative to proper and improper methods of operating floor furnaces so as to obtain optimum comfort results.

It is desired that this year's work along the above lines by means of collating results of actual experiences will offer something of value to those who have considered the question "What advantages do floor furnace sales offer us?"

Subcommittee on New Markets, A. W. Lundstrum, Chairman

This year's Subcommittee on New Markets feels that the greatest contribution that it can make toward the development of new markets for gas

A. W. Lundstrum

house heating is to determine, if possible, whether the industry really wants any new markets for house heating. There is unfortunately no unanimity of opinion in the industry, especially in the manufactured branch of the industry, that house heating is a desirable and valuable load. Many executives feel that house heating is an unprofitable load and, therefore, should not be promoted, while still others feel that there is a profit to be made out of it for itself alone, and that it has very definite collateral benefits in its effect on holding cooking, water heating and refrigeration load on gas. As long as this difference of opinion exists, it is difficult to formulate and carry through any effective program for developing new markets for house heating.

Economics of House Heating Load

This year's committee is attempting to analyze this problem and reach some definite conclusions. It is attacking it from two angles. First, the economics of the load itself, which it proposes to do by reviewing and bringing up to date various economic studies which have been made by previous committees, and second, by a statistical analysis of the effect of gas house heating in its various forms on the use of gas for other household services. It is contacting the various utility companies in the industry to determine first, if sufficient data are available from which to draw conclusive results, and second, if data are not available if a sufficient number of companies will take steps to obtain it.

The committee proposes to survey the opinion and experience of the industry in connection with spring and fall heating by gas as distinguished from gas heating available all season. Many in the industry feel that this type of heating is much more desirable than complete house heating and may give the same collateral benefits with respect to other household load. An analysis of the industry's experience along this line should give valuable clues as to methods of developing this market.

The New Markets Subcommittee feels that the industry has very little factual data about the market for house heating, the customers' needs and desires, their attitude toward gas house heating, the deterrence toward the sale of gas house heating, and the premium which gas as a house heating fuel may command. These are items which can only be obtained from a carefully and scientifically conducted survey of the industry's customers and prospects. Such a survey must of necessity be conducted by an organization trained for this type and not by the industry itself. The committee does not feel that this project may be undertaken this year, but it feels that it can contribute something by contacting various market research organizations to determine the methods of approach, costs, and other items with a view of making definite recommendations for the work of future committees.

Subcommittee on New Sales Methods, C. V. Sorenson, Chairman

C. V. Sorenson

This committee expects to confine itself to the study on new and improved methods of selling existing equipment to present markets and will collect data from widely geographically diversified sources on the following subjects:

1. The value of house heating in preserving other residential business.

2. What does the gas company representative feel to be the most effective sales approach and in what way can the manufacturer be of considerable assistance?

3. From the manufacturers' viewpoint, what can the gas company do that will be most effective in helping the manufacturer develop the present market?

4. How important is the dealer, and what is the most effective method of dealer cooperation?

5. What is the most effective plan for the development of house heating business in the territory of a company that has decided it wants such a load?

6. General recommendations as to rate forms and levels which have been most successful in securing this business.

7. Samples of sales material, ads, campaigns, etc., that have been used most successfully.

It is the plan of this committee to arrange this material in form for publication to the industry.

Subcommittee on Direct Heating, V. L. Black, Chairman

V. L. Black

The work of the Direct Heating Subcommittee for 1940 will be confined chiefly to investigating various phases of the modern gas circulating heater problem. It is believed that proper use of this appliance offers a large amount of potential new revenue as well as an effective means of protecting existing load against competition from other fuels.

The most important part of the committee program will be in connection with the proper installation of modern gas circulating heaters. Experience of many companies in the past has proven definitely that so-called space heating by gas left much to be desired with respect to customer satisfaction, and, while it may have increased gas company revenue for a period of time, it did not provide a load with a high permanency factor.

It will be the aim of the committee to point out the extreme necessity of avoiding earlier pitfalls and of establishing new direct heating gas load on a sound basis. This presupposes connecting all circulating heaters above a certain maximum B.t.u. input to an active flue. It is probable that the American Gas Association will be urged to reconsider with a view to revision its present

laboratory practice of approving unvented circulators up to 50,000 B.t.u. input. Cooperation of circulating heater manufacturers will be essential to the success of this endeavor.

Another line of investigation will be on what basis circulating heaters can best be sold in volume. It is believed now that the strongest appeal this appliance has is its operating cost, which, if figures at hand can be substantiated, is low enough comparatively to approach competition.

The committee plans to submit an inquiry to some seven hundred member companies for the purpose of determining the general attitude toward the objectives outlined.

The House Heating Committee is tentatively planning to hold its third meeting during the Natural Gas Section Convention in Houston in May.

"Wizard of Cookery" Is Sales Theme

PRESENTED in four-act form, the Spring 1940 promotion portfolio of American Stove Company outlines complete Spring advertising and merchandising plans on Magic Chef ranges. The portfolio dramatizes cooking magic in terms of the Magic Chef character as a magician with the aid of an attractive girl stooge.

"This year," says S. E. Little, vice-president in charge of sales, "our campaign is built around the Wizard of Cookery, developed in terms of cooking-magic for the consumer, and profit-magic for the dealer, and makes a natural tie-up with our product name."

The 32-page promotion portfolio is an elaborate three-color job, in blue, silver and black.

Storm Damage Brings Utilities Praise

DAME Nature early this week staged a magnificent unscheduled publicity stunt in behalf of the public utilities," reads the opening of M. S. Rukeyser's article in March 7 issue of New York *Journal-American*. It tells of the havoc wrought to overhead telephone, electric light and power lines by the previous Monday's ice storm and also refers to the sense of isolation which became more acute as the broken lines, designed to bring in electric current, kept the radios silent and incommunicado with the outside world. As the current ceased to flow the oil burners, which leaned on electric current, went cold.

The article says the typical family in Westchester County and in sections of Long Island were thrown back to the primitive conditions of Thoreau's Walden. "I for one didn't think that the interruption represented progress," says the writer, adding, "but my hat goes off to the utility companies. They immediately began to meet the onslaught from nature with all the available man power in nearby regions."

The balance of the article points out the value of utility services which are proved by the fact that folks are jarred into a recognition of values through their temporary loss. Further the article reads: "In modern business, there is an endless competition among commodities and services. The storm episode scored a point in favor of the gas heater, for gas pipes, running underground, were undisturbed when overhead electric wires were momentarily torn down. This type of inter-commodity competition, in connection with the attitude of the consuming public toward proffered goods and services, constitutes the most effective regulator of the business man—far more sensitive to the dynamics of an evolving industrial civilization than static bureaucrats on governmental payrolls."

Streamlined High Pressure Holder Constructed at Corvallis

New gas storage holder at Corvallis, Ore. At right—R. G. Barnett, (left) vice-president and general manager of Portland Gas & Coke Co., being congratulated on the holder's construction by Mayor H. W. Hand of Corvallis

FULFILLING a demand for gas service brought about by the largest customer roster in its history of service in Corvallis (Oregon), where Oregon State College with 4500 students is situated, Portland Gas & Coke Company recently constructed a new streamlined and attractive 100,000 cubic foot high-pressure gas storage holder, first of its kind to be built in the Pacific Northwest.

Growth of business in general in Corvallis as well as the increasing popularity of gas in this area made necessary erection of the holder. Rated one of the fastest growing cities in the Pacific Northwest, Corvallis is also fast becoming predominately gas conscious.

Expressing belief in Corvallis and its future at the recent dedication of the holder, Mr. Barnett, vice-president and general manager of Portland Gas & Coke Company, stated, "Gas service means much in modern living because it brings comfort and convenience—helping to raise standards of living to a level undreamed of only a few years ago."

The holder has attracted considerable attention even from those who were unfamiliar with its construction. It is located on an acre of land at Kings Road and Fillmore Street.

Resembling a "blimp," the huge cylinder was welded together successfully from sixty-two tons of steel plates, despite the seven-eighths inch thickness of each plate. All welding was done on the job. The holder is 25 feet in diameter and 58 feet long and rests on a concrete foundation.

Supply of gas comes from Portland Gas & Coke Company's large chemical and manufacturing plant in Portland, and is pumped through more than 90 miles of steel gas mains to Corvallis. Nightly the holder is filled with gas under pressure in preparation for daytime use by customers in Corvallis.

ner F. Schmidt

. D. Hancock

rles R. Bellamy

hn H. Warden

A. Dougherty

I. C. Cooper

PROGRAM

Twenty-Fifth A... Gas
Seventeenth An... on C
the American G... n, R
Houston, T... 6-

Sin Duva, the Program Committee left nothing out when it pla... program for the annual Natural Gas Convention and Distributio... ence of the American Gas Association, being held concurrently, M... in Houston, Texas. Subjects to be presented at the sessions are all ... to give the gas man what he needs to keep in step with the indus... tionally recognized authorities on topics ranging from "accident pre... to "well delivery problems" will be on tap to interpret the ... developments. Here are some of the highlights.

GENERAL SESSIONS

Presiding—Elmer F. Schmidt, Chairman, Natural Gas Section, and Vice-President and Operating Manager, The Lone Star Gas Company, Dallas, Texas.

The Status, the Trends, the Future of the Natural Gas Industry. Elmer F. Schmidt.

The Company Program for the Sale of Summer Air Conditioning. Charles R. Bellamy, Chief Engineer, Gas Department, Columbia Gas & Electric Corp., New York, N. Y.

Institutional Advertising and Publicity. John H. Warden, Sales Manager, Oklahoma Natural Gas Company, Tulsa, Okla.

Federal Power Commission Procedure under the Natural Gas Act. Wm. A. Dougherty, Counsel, Standard Oil Company (of New Jersey), New York, N. Y.

Contribution to the Natural Gas Industry by the Studies of the Main Technical & Research Committee. Howell C. Cooper, Chairman, Main Technical & Research Committee, Natural Gas Section, American Gas Association, New York, N. Y.; Hope Natural Gas Company, Pittsburgh, Pa.

Relationships of Fundamental and Applied Research to Problems Confronting the Natural Gas Industry. Frank C. Smith, Chairman, Committee on Fundamental Research, American Gas Association, New York, N. Y.; President, Houston Natural Gas Company, Houston, Texas.

Industrial Gas—What It Means to Us. D. W. Harris, Vice-President and General Manager, Arkansas Natural Gas Corp., Shreveport, La.

Improvements in Industrial Processes Through Advancement in Heat Application. Henry O. Loebell, Vice-President, Combustion Utilities Corp., New York, N. Y.

Additional Data on Gas Hydrates. W. M. Deaton and E. M. Frost, U. S. Bureau of Mines, Amarillo, Texas.

Program leaders at the convention, l... George S. Young, Davis M. DeBard, ... Rainey, J. French Robinson and C. ...

Contribution to the Natural Gas Industry by Research in the Steel Industry. Herbert W. Graham, Director of Metallurgy and Research, Jones & Laughlin Steel Corp., Pittsburgh, Pa.

Studies in Microbiological Anaerobic Corrosion. Raymond Hadley, Susquehanna Pipe Line Co., Philadelphia, Pa.

Sulphur Removal from Natural Gas. W. R. Wood, Girdler Corp., Louisville, Ky.

Electrolysis Mitigation for Protection of Underground Distribution Systems Within Cities. R. J. Kuhn, Consulting Engineer, New Orleans, La.

Determination of the Current Required for Cathodic Protection. Dr. Scott Ewing, National Bureau of Standards, Washington, D. C.

Opportunities Presented to Gas Companies in the Community Development Program. H. C. Thuerk, General Manager of Sales, Utility Management Corp., New York, N. Y.

DISTRIBUTION

Presiding—C. H. Waring, ... A. G. A. Distribution Comm... General Superintendent, Kansa... Co., Kansas City, Mo.

Distribution Design for He... Heating Loads. G. J. Hecken... lic Service Co. of Colorad... Colo.

Pipe Line Capacity and Metho... culating Flow of Gas in D... Networks. Lee Holtz, South... fornia Gas Co., Los Angeles, ...

Capacity of Distribution Net... E. Bates, The Peoples Gas Li... Co., Chicago, Ill.

Housing Developments and T... on Gas and Electric System... Watkins, Consolidated Edis... New York, Inc., New York, ...

Use of Pressure Regulators o... pliances. H. L. Masser, Sou... fornia Gas Co., Los Angeles, ...

Frank C. Smith *D. W. Harris* *Dr. Scott Ewing* *Lee Holtz* *C. H. M...*

IGHLIGHTS

Gas Convention
ion Conference of
n, Rice Hotel—
6-10, 1940

ition to an interesting and constructive program, this hustling, happy
ospitable "Derrick Empire" in the Texas Gulf Coast country offers
other features of interest. Many convention visitors are planning a
this thriving territory "where life is different," some are planning to
a tarpon in the Gulf and some will go into Mexico after the Conven-
The Convention Committees are making extensive plans to entertain
3000 people in Houston. Join the crowd there.

of Houston's business section. This
ity is the hub of the new and fast-
industrial empire of the Southwest

ces Regulating the Installation
Appliances. H. W. Geyer,
California Gas Co., Los An-
Calif.

ntrol. Lee Holtz, Southern Cal-
Gas Co., Los Angeles, Calif.

tion and Maintenance, E. G.
ll, The Peoples Gas Light and
., Chicago, Ill.

ces and Appliance Servicing. W.
e, Arkansas Louisiana Gas Co.,
rt, La.

f Flexibility of Gas Appliances
g on Natural Gas. R. M. Con-
Director Testing Laboratories,
n Gas Association, Cleveland,

PRODUCTION

ing—J. French Robinson, Chair-
roduction Committee, Natural
tion, and President, The Peo-
tural Gas Company, Pittsburgh,

Our Experiences with Underground Storage of Gas.

Carl U. Daniels, Vice-President, Oklahoma Natural Gas Company, Tulsa, Okla.

Fenton Finn, Geologist, The Peoples Natural Gas Company, Pittsburgh, Pa.

Porter D. Mellon, General Supt. and Chief Engineer, Canadian Western Natural Gas, Light & Power Co., Calgary, Alberta, Can.

J. H. Newlon, Geologist and Supt. of Production, Equitable Gas Company, Pittsburgh, Pa.

Natural Gas Storage and Its Effect on Transmission Operations. S. A. Chadwell, The Ohio Fuel Gas Company, Columbus, Ohio.

A Study of Mixtures of Separator Gas and Liquid From a Combination Well, Cayuga, Texas. C. K. Eilerts, U. S. Bureau of Mines, Bartlesville, Okla.

Drilling Beyond the First Mile—with Rotary Tools. C. E. Reistle, Humble Oil and Refining Co., Houston, Texas.

Drilling Beyond the First Mile—with Standard Tools. H. A. Wallace, Jr., United Fuel Gas Company, Charleston, W. Va.

TRANSMISSION

Presiding—George S. Young, Chairman, Transmission Committee, Natural Gas Section, and Vice-President of the Michigan Gas Transmission Corp.

Results Obtained with Cathodic Protection. F. A. Hough, Distribution Engineer, Southern Counties Gas Company, Los Angeles, Calif.

Developments in Asphalt Mastic Coatings on Pipe Lines. W. W. Colley, General Manager, Industrial Engineering Company, Bartlesville, Okla.

The Effect of Internal Roughness on Flow Efficiency. Ray A. Ransom, Panhandle Eastern Pipe Line Company, New York, N. Y.

Radio Communication for Dispatching and During Emergencies. W. T. Bulla, Supt. of Telephone and Pressure, Natural Gas Pipeline Company of America, Chicago, Ill.

Use of the "Go-Devil" for Improving the Flow Efficiencies of Natural Gas Pipe Lines. C. H. M. Burnham, Chief Engineer, Panhandle Eastern Pipe Line Company, Kansas City, Mo.

Emergency Pipe Line Repair Equipment. H. E. Smith, Divisional Supt., Natural Gas Pipeline Company of America, Chicago, Ill.

Four Point Control in the Operation of the Four Cycle Natural Gas Engine. B. L. Rogers and O. H. Moore, Lone Star Gas Company, Dallas, Texas.

Large Welded Pipe Lines. H. J. Carson, Vice-President, Northern Natural Gas Company, Omaha, Neb.

Analysis of Transmission Costs. J. H. Lang, Supt. Pipe Line Dept., The Ohio Fuel Gas Company, Columbus, Ohio.

Experience Acquired Over a Period of Years in the Operation and Maintenance of a Natural Gas Transmission Line.

(Continued on page 142)

Herbert W. Grah

F. H. Adams

L. S. Reagan

T. J. Gallagh

George M. Par

D. W. Reeve

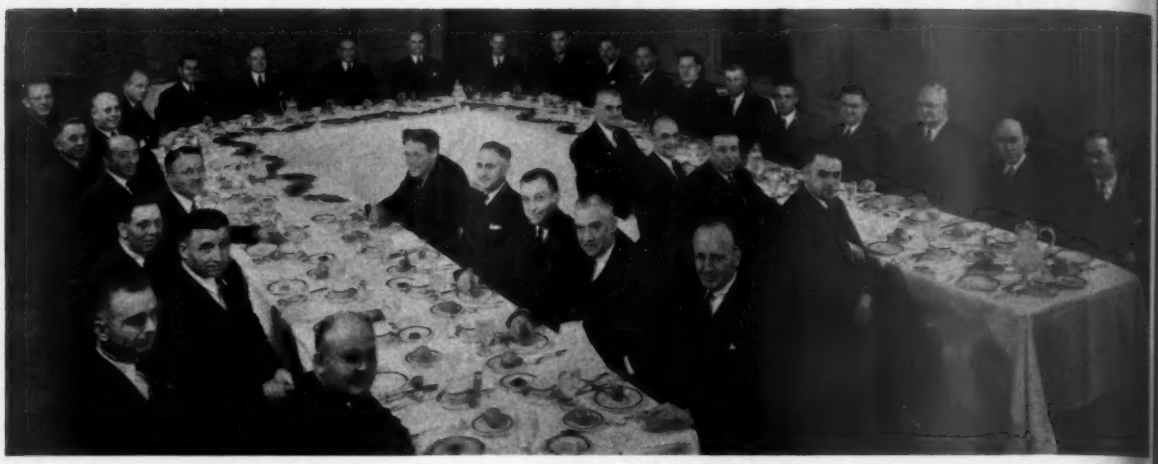
ch Robinson

F. M. Rosenkrans

Franklin T. Rainey

H. Carl Wolf

Henry O. Loebell



These key men in the Natural Gas Section, meeting in Chicago, December 11, laid plans for the natural gas convention. Left to right, around the table: J. H. Warden, F. S. Kelly, Jr., J. I. Cormany, D. W. Chapman, F. X. Mettenet, H. O. Loebell, Karl Emmerling, E. D. Milener, G. G. Sheehan, G. S. Young, F. T. Rainey, D. M. DeBard, T. R. Weymouth, J. French Robinson, C. H. Waring, E. H. Poe, R. H. Ulrich, E. R. Cunningham, F. H. Lerch, Jr., J. P. McClintock, J. H. Clark, R. G. Strong, C. C. Phillips, Lee Woodward, C. B. Day, and L. M. Holmes. Inside the table, left to right: H. Leigh Whitelaw, C. E. Bennnett, J. W. West, Jr., Julian L. Foster, P. McDonald Biddison, T. E. Wood, I. D. Ross, F. M. Rosenkrans, and W. L. Hutcheson

C. B. Abbott and W. R. Beardsley, Colorado Interstate Pipe Line Co., Colorado Springs, Colo.

DOMESTIC NATURAL GAS SALES

Presiding—Davis M. DeBard, Chairman, Commercial Section, and Vice-President, Stone & Webster Service Corp., New York, N. Y.

Sales! and *More Sales!* will be the keynote of the sessions of the Domestic Natural Gas Sales Conference, with top-flight executives in and out of the gas industry scheduled to bring their messages to the convention. Among those who have accepted invitations to speak are:

Merchandising and Jobbing—Profit and Loss. V. H. Moon, Central Service Corp., Chicago, Ill.

Promoting Dealer Sales. F. M. Rosenkrans, The Gas Service Co., Kansas City, Mo.

What Further Utility Cooperation Is Needed for Industry Success? F. H. Adams, President, Association of Gas Appliance and Equipment Mfrs., New York, N. Y.

One of the unique features of the program will be the presentation of the Gas *Information Please* Skit with Walter C. Beckjord acting as Interlocutor.

INDUSTRIAL GAS SALES

Presiding—Franklin T. Rainey, Chairman, Industrial Gas Section, and General Sales Manager, The Ohio Fuel Gas Co., Columbus, Ohio.

H. Carl Wolf, Vice-Chairman, Industrial Gas Section, and President, Atlanta Gas Light Co., Atlanta, Ga.

Economics of Modern Gas Engine Power. D. W. Reeves, Manager Industrial Gas Sales, Oklahoma Natural Gas Company, Tulsa, Okla.

An Analysis of New Industrial Gas Applications. George M. Parker, Asst. to Vice-President and General Manager, Mississippi River Fuel Corp., St. Louis, Mo.

The Hotel, Restaurant and Bakery Loads. T. J. Gallagher, Manager Commercial Sales, The Peoples Gas Light & Coke Co., Chicago, Ill.

The Modern Tempo in Sales to Business Concerns. W. L. Childs, Vice-President and General Manager, Reed Roller Bit Company, Houston, Texas.

Cooperating with Outside Promotional Agencies To Develop New Industrial Gas Customers. Walter N. Ford, Industrial Development Department, United Gas Pipe Line Company, Houston, Texas.

National Publicity, National Advertising—A Powerful Program for Industrial Gas Sales. Harry W. Smith, Jr., Director, Industrial Gas Publicity, American Gas Association, New York, N. Y.

Servicing Industrial and Commercial Gas Equipment. Carl A. Renz, Supt. of Customer Service, Southern California Gas Co., Los Angeles, Calif.

Some Points on Selling Industrial Gas. L. S. Reagan, Vice-President, Webster Engineering Company, Tulsa, Okla.

Accident Prevention and Employee Education subjects will be fully covered on the convention program, but cannot be announced at this time.

Hollywood Scoop

A whole car load of gas ranges and gas refrigerators was called for in one scene of MGM's crime short, "Lest We Forget."

Prominent Manufacturer Dies Suddenly

E. R. Guyer

EDWARD R. GUYER, prominent Chicago manufacturing executive and immediate past president of the Association of Gas Appliance and Equipment Manufacturers, died suddenly on Monday, March 18, of injuries sustained in a fall. He was 48 years old.

Mr. Guyer at the time of his death was first vice-president of Cribben & Sexton Co., Chicago, Ill., manufacturers of gas ranges. During his career in the manufacturing business he attained an enviable reputation as a brilliant executive. His first major executive position was as production manager of the Moline Plow Works; then as superintendent of the Rock Island Stove Company and finally to Cribben & Sexton Company.

He was president of the Association of Gas Appliance and Equipment Manufacturers during 1938-39 and was also past president of the Manufacturers Protective and Development Association. At the time of his death he was a member of the boards of the American Gas Association and the Association of Gas Appliance and Equipment Manufacturers.

Mr. Guyer was educated at The Hill School and was graduated from Cornell University in the class of 1915 with a mechanical engineering degree. While in college he was a member of the varsity football team in 1912-13-14, and also a member of Kappa Alpha Fraternity.

Personal AND OTHERWISE

Named Superintendent in New Orleans

Clayton L. Nairne

CLAYTON L. NAIRNE has been appointed general superintendent of the gas department of the New Orleans Public Service Inc., to succeed the late Arthur E. Merchant. Mr. Merchant died suddenly from a heart attack in December of last year. Mr. Nairne was formerly superintendent of distribution of the department.

Mr. Nairne is a native Orleanian, having been born in the Crescent City April 1, 1903. He received his academic education at Rugby Academy, in New Orleans, and later received a degree of Bachelor of Engineering from Tulane University in June, 1924.

Immediately upon leaving Tulane, he entered the employ of the New Orleans utility as student engineer in July of 1924. He left this company for a while to accept the position as Plant Betterment Engineer in the Power Department of the Florida Power and Light Company in February, 1926. In 1928, however, he rejoined the New Orleans company as Combustion Engineer in the Gas Department. He also served, prior to his present position, as Assistant Chief Engineer and Superintendent of the Meter and Appliance Division in the Gas Department.

Mr. Nairne is a member of the American Gas Association and Southern Gas Association, and is well known in circles throughout the industry.

High Tribute Paid to G. S. Hawley

AN unusual tribute to the character of George S. Hawley, president of The Bridgeport Gas Light Co., Bridgeport, Conn., was recently paid by W. Gibson Carey, Jr., president of the Chamber of Commerce of the United States. In an address at Bridgeport on February 19, Mr. Carey said:

"In every phase of life you (Bridgeport) have outstanding, public-spirited citizens. I am fortunate, indeed, in being able to count among my friends a number of these men, who are leaders in your business life. For want of time, I shall mention only one by name. It is impossible to work with this man without being deeply impressed by his quiet strength and his unfailing helpfulness.

"Some nine years ago he headed a meeting here at which I was speaking on the Share the Work Movement. He is presiding tonight. He has served his city, his state and his country in many capacities, among which are his directorship of the Chamber of Commerce of the United States and his chairmanship of that organization's Finance, Budget and Audit Committee. I refer to your respected and beloved citizen, George S. Hawley, president of The Bridgeport Gas Light Company."

Awarded Service Cross 22 Years After War

Thomas H. Hall

TWENTY-TWO years after the World War ended, a Distinguished Service Cross has been awarded to Thomas H. Hall for heroism in action in France during 1918. Mr. Hall, who has been a member of the Pacific Coast gas industry for 26 years, was recently advised by the War Department of this belated recognition of one of the most amazing feats of the war.

Mr. Hall was originally affiliated with the C. B. Babcock Company, gas appliance distributors in San Francisco, from 1914 to 1917. Early in January, 1917, he entered the service of the Southern Counties Gas Company as a gas appliance salesman. In October, 1917, Mr. Hall was taken in the first draft, and went overseas with Company B, 364th Infantry of the 91st Division.

Leading a patrol of three men, who were ordered to dislodge two German machine gun nests, Mr. Hall and his men advanced up an open road in the face of the German fire and succeeded in capturing 13 enemy gunners who had held up an American advance. He narrowly escaped death as one bullet went through his helmet, nicking his scalp.

Returning to the United States after the war, Mr. Hall worked for the Pacific Gas and Electric Company in San Francisco as a gas appliance salesman for two years, and in 1921 he again became affiliated with C. B. Babcock Company in San Francisco. In 1934 the Roper Gas Range and Humphrey Radiant Fire Agencies which Mr. Hall had handled for Mr. Babcock in Southern California, were given to Mr. Hall. At the present time, he is manager of Mabon Roper's interests in Southern California. He is a member of the Pacific Coast Gas Association and an affiliate member of the A.G.A.

When notified of the above award by the War Department, Mr. Hall was requested to go to San Francisco on April 6, Army Day, where he is to receive the decoration with full military honors at the Presidio.

Honored by University

THE University of Pennsylvania conferred an honorary degree of Doctor of Laws upon Conrad N. Lauer, president of The Philadelphia Gas Works Co., at impressive ceremonies at the University on February 17. Mr. Lauer is immediate past president of the American Gas Association and a recognized leader of the gas industry.

The citation, read by Dr. Thomas N. Gates, president of the University, follows:

"Master of engineering theory and mechanical techniques, and organizer of great commercial enterprises, you have also actively assisted the promotion of science and the arts in four educational institutions. This University, which has profited by your interest and counsel, confers on you the Degree of Doctor of Laws admitting you to all the rights and privileges pertaining to that degree, in token of which I hand you this diploma, signed, and sealed with the seal of the Corporation."

Dr. Lauer

CONVENTION CALENDAR

APRIL

Apr. 5 **Maryland Utilities Association**
Lord Baltimore Hotel, Baltimore, Md.

9 **New Jersey Gas Association**
Berkeley-Carteret Hotel, Asbury Park, N. J.

11-12 **A. G. A. Accounting Section Spring Conference**
White Sulphur Springs, W. Va.

15-16 **Arkansas Utilities Association**
Hot Springs, Ark.

15-17 **Mid-West Gas Association**
Lincoln Hotel, Lincoln, Nebraska

16-18 **Southwestern Gas Measurement Short Course**
University of Oklahoma, Norman, Okla.

17-19 **Missouri Association of Public Utilities**
Elms Hotel, Excelsior Springs, Mo.

22-23 **Gas Meters Association, Florida and South Georgia**
Hollywood Beach Hotel, Hollywood, Fla.

26-27 **Penn State College Petroleum and Natural Gas Conference**
State College, Pa.

29 **American Trade Association Executives**
Washington, D. C.

Apr. 29-May 2 **U. S. Chamber of Commerce**
Washington, D. C.

MAY

May 6-10 **A. G. A. Natural Gas Section Convention**
Houston, Texas

6-10 **A. G. A. Distribution Conference**
Rice Hotel, Houston, Texas

8-11 **National Fire Protection Association**
Atlantic City, N. J.

13-14 **Indiana Gas Association**
Evansville, Ind.

14-16 **Pennsylvania Gas Association**
Sky Top Lodge, Sky Top, Pa.

18-25 **International Petroleum Exposition and Congress**
Tulsa, Okla.

20-22 **Association of Gas Appliance and Equipment Manufacturers**
French Lick Springs, French Lick, Ind.

20-22 **A. G. A. Joint Production and Chemical Conference**
Hotel Pennsylvania, New York, N. Y.

23-24 **A. G. A. Executive Conference**
Palmer House, Chicago, Ill.

27-31 **American Petroleum Institute,**
Blackstone & Texas Hotels, Fort Worth, Texas

30-31 **A. G. A. Hotel, Restaurant and Commercial Sales Conference**
Atlanta Biltmore Hotel, Atlanta, Ga.

30-31 **Natural Gas and Petroleum Association of Canada**
Hotel London, London, Ontario

JUNE

June 4-6 **Edison Electric Institute**
Atlantic City, N. J.

23-27 **American Home Economics Association**
Hotel Statler, Cleveland, Ohio.

24-28 **American Society for Testing Materials**
Chalfonte-Haddon Hall, Atlantic City, N. J.

JULY

July 3-5 **Canadian Gas Association—Joint Meeting with Pacific Coast Gas Association**
Jasper Park Lodge, Alberta, Canada

8-10 **Michigan Gas Association**
Grand Hotel, Mackinac Island, Mich.

AUGUST

26-29 **Appalachian Gas Measurement Short Course**
Morgantown, W. Va.

SEPTEMBER

Sept. 18-20 **Pacific Coast Gas Association**
Hotel del Coronado, Coronado, Calif.

25-27 **American Trade Association Executives**
Chicago, Ill.

26-27 **Empire State Gas & Electric Association**
Westchester Country Club, Rye, N. Y.

OCTOBER

Wk. 7 **American Gas Association Annual Convention**
Atlantic City, N. J.

Wins Annual Medal for Sales Job

Edward Meyer

THE commercial manager's medal for 1939, donated each year to the member of the commercial department of Portland Gas & Coke Company, Portland, Oregon, who makes the most improvement over the previous year, was this year awarded to Edward Meyer, residential salesman for the company, it was announced by John J. Winn, Jr., commercial manager.

Mr. Meyer made real advancement in improving personal efficiency and drive in addition to his excellent record in increased sales, Mr. Winn said.

Sales of all appliances were "upped" by Mr. Meyer—gas range sales increased 140 per cent, furnace and conversion burner sales showed a 50 per cent increase, and gas refrigerator and gas water heater sales showed increases of 125 per cent and 34 per cent respectively.

Fred Champion Retires

DIRECTORS of Southern Counties Gas Company elected W. J. McCoy treasurer, and Joseph Sodoma assistant secretary, at their meeting March 20. These positions had been held by Fred Champion, who retired from active service on April 1 in accordance with the company's uniform pension and benefit plan.

Mr. Champion had been identified with the organization since 1913, when he was employed as district agent in Santa Ana. Between 1913 and 1919 he worked in various capacities in Santa Monica, Pomona and San Pedro, and became test engineer in the general office, with headquarters in Los Angeles, in 1919. He was elected assistant secretary of the company in 1931, and treasurer in 1934.

Mr. McCoy is comptroller and director of the company, and Mr. Sodoma is assistant to the vice president and general manager.

Race Horse Logic

SOME gas men think that W. C. Gaffey and J. H. Sattler, of Los Angeles, gas range manufacturers, might want to add a CP seal to their race horse, Wedding Call, as well as their gas ranges after the latter's great race in the Santa Anita Handicap at Acadia, Calif., on March 2. In a strong field of 13 outstanding thoroughbreds, Wedding Call ran fourth to win a $5,000 purse for its owners. Seabiscuit was the winner.

AFFILIATED ASSOCIATION *Activities*

New England Gas Association Meeting Breaks Records

J. A. Weiser

TOPPING all previous attendance figures, the fourteenth annual business conference of the New England Gas Association, held March 14 and 15 at the Hotel Statler, Boston, attracted 626 registered delegates who were amply rewarded by an outstanding program. In addition to the many valuable papers and round-table discussions, the meeting included a manufacturers' exhibit showing the latest developments in gas appliances and equipment. This was the first exhibition of this type sponsored by the New England group.

A. G. A. Speakers

Highlight of the Thursday morning meeting was the address of Walter C. Beckjord, president of the American Gas Association, which is reproduced in full in this issue of the MONTHLY. Alexander Forward, managing director of the American Gas Association, spoke briefly on the significance of the consumer movement and the gas industry's pioneer steps to safeguard the consumer. New England Gas Association activities were reviewed in reports by R. J. Rutherford, president, and Clark Belden, executive secretary. Other speakers at this session were H. C. Thuerk, chairman of the A. G. A. Community Development Committee, and John Fry, treasurer of the Association of Gas Appliance and Equipment Manufacturers.

Awards were given to company sales contest winners and division best paper winners.

A feature of the first session was the election of officers and directors for 1940. Those selected were: President, J. A. Weiser, Newport Gas Light Co.; first vice-president, C. G. Young, Springfield Gas Light Co.; second vice-president, John West, New England Power Service Co., Boston; treasurer, F. D. Cadwallader, Boston Consolidated Gas Co.; clerk, Clark Belden. Fourteen directors also were elected.

New division chairmen are: M. J. Coughlin, The Hartford Gas Co., accounting; R. D. Hawkins, The Bridgeport Gas Light Co., industrial; G. D. Yeaton, Detroit-Michigan Stove Co., manufacturers; W. C. Slade, New England Power Service Co., Boston, operating; R. D. Stuart, Jr., Fall River Gas Works Co., sales.

The afternoon session heard talks by Fred Van Coven of the American Petroleum Institute and William F. R. Munnich of the Philadelphia Electric Co., and included an informal panel discussion on "Where Do We Go from Here?", participated in by seven association officials. A one-act play by employees of The Brooklyn Union Gas Co. rounded out the meeting.

Friday morning was devoted largely to two highly informative symposiums on appliance sales and servicing projects. D. H. Linton of the New England Gas and Electric Association presented an interesting discussion on "Domestic Shrinkage." The afternoon session included addresses on the consumer movement, the trade association movement and telephone research. Hall M. Henry, of the New England Gas & Electric Association, made a valuable contribution on "Gas Company Progress."

One of the high spots of the convention was the home service luncheon meeting. A featured speaker at this meeting was Mrs. Eliza M. Stephenson, chairman of the A. G. A. Home Service Committee, who told how "Home Service Meets the Consumer."

Wisconsin Utilities Association

Bruno Rahn

REPRESENTATIVES of gas companies and manufacturing companies were jubilant over the success of the convention of the Gas Section of the Wisconsin Utilities Association, March 11 and 12, where they joined in offering two convention innovations. One was the presentation of the Cavalcade of Gas, depicting the historical background of the industry and visualizing modern selling methods of "Gas for the Four Big Jobs." The other innovation was the substitution of an entertaining two-hour floor show sponsored by manufacturer representatives.

Attendance Record Falls

All previous convention attendance records were broken. The total registration was 425. Inspirational addresses and statistical reports were so intertwined that delegates received a well-balanced diet of valuable information.

The American Gas Association was represented on the first session's program by president, Walter C. Beckjord, and Managing Director Alexander Forward. President Beckjord delivered an inspiring address entitled "A Sales Philosophy for the Gas Industry," parts of which are reproduced elsewhere in this issue of the MONTHLY.

Bruno Rahn, president of the Wisconsin Utilities Association, revealed that member companies of the Association in the past year paid $21,574,376 in salaries and wages to 12,131 employees. Payrolls in 1940, he said, are expected to exceed this sum. Declaring that the ever-mounting tax burden

Officers and directors of the New England Gas Association at the annual convention in Boston, March 14 and 15. Left to right, front row: A. C. Kenney, Hall M. Henry, J. A. Weiser, incoming president, R. J. Rutherford, outgoing president, C. G. Young, first vice-president, John West, second vice-president. Middle row: F. M. Goodwin, I. T. Haddock, G. W. Stiles, W. C. Slade, H. R. Sterrett, C. H. Cummings, R. D. Stuart, Jr., and F. D. Campbell. Back row: Clark Belden, executive secretary, M. J. Coughlin, R. L. Fletcher, F. L. Ball, N. B. Bertolette, A. E. Norton, L. E. Knowlton, R. D. Hawkins, and D. H. Levan

is one of the most discouraging factors facing the utilities, Mr. Rahn revealed that $12,906,853 was paid by Wisconsin companies in taxes to local, state and federal units in 1939.

The technical and commercial division meetings, held the afternoon of March 12, brought out many worthwhile papers.

At the closing sessions of the convention, H. E. Sweet, Wisconsin Power & Light Co., Madison, was elected chairman of the technical division and O. W. Barenscher, Wisconsin Public Service Corp., Sheboygan, vice-chairman. Paul DeLeon, Wisconsin Power & Light Co., Madison, was elected chairman of the commercial division and C. A. Debell, Wisconsin Public Service Corp., Sheboygan, vice-chairman.

New Jersey Gas Association

G. B. Webber

A PROGRAM that emphasizes sales problems but does not neglect other phases of the gas business has been arranged for the twenty-ninth annual convention of the New Jersey Gas Association which takes place April 9 at The Berkeley-Carteret Hotel, Asbury Park, N. J. In addition to the business session headed by the address of President George B. Webber, the Association is staging a one-day meeting which includes such four-star performers as Walter C. Beckjord, president, American Gas Association; William A. Irwin, educational director, American Institute of Banking; and Dr. Daniel Starch, of Daniel Starch & Staff, nationally known market analyst and research specialist.

Home service has a prominent place on the program with a special luncheon for those interested in this activity. Mrs. Eliza M. Stephenson, chairman of the A. G. A. Home Service Committee, will deliver an address entitled "Home Service Looks Ahead."

Of special interest will be a discussion of new appliances developed for the gas industry presented by R. D. McNiece, appliance engineer of the Public Service Electric & Gas Co.

The Four Big Jobs will be covered in a sales symposium on cooking, refrigeration, water heating, and house heating and air conditioning, which will be led by L. C. Ginn, chairman, CP Range Sales Management Committee, Association of Gas Appliance & Equipment Manufacturers; A. D. Howard, Servel, Inc.; B. A. Seiple, Jersey Central Power & Light Co.; and H. P. Morehouse, Public Service Electric & Gas Co., Newark.

A feature of the meeting will be the presentation of McCarter Medals for outstanding acts of life saving.

Special entertainment features, including a banquet, will be held in the evening.

Florida-Georgia Gas Meters Association

A PROGRAM of wide appeal has been arranged for the Spring Convention of the Florida-South Georgia Gas Meters Association at the Hollywood Beach Hotel, Hollywood, Florida, April 21-23, according to A. H. Bruning, of the Florida Public Service Company, Orlando, president of the Association.

In addition to official Association business, there will be addresses by such widely known gas industry specialists as Carl Sorby, Geo. D. Roper Corp.; H. Carl Wolf, president, Atlanta Gas Light Co.; Robert Agee, Association of Gas Appliance & Equipment Manufacturers; R. J. Canniff, Servel, Inc.; McGregor Smith, president, Florida Power & Light Co.; H. R. Cloud, vice-president, Florida Public Service Co., and others. The afternoon sessions on April 22 and 23 will be divided into three sections—residential, technical and commercial—each of which will have a separate program.

One of the featured speakers will be Jessie McQueen, home service counsellor, American Gas Association, who will discuss "What's Next in Home Service." Two luncheon meetings and a banquet followed by dancing will round out the program. Special entertainment attractions have been arranged for gas men and visiting ladies.

Missouri Association of Public Utilities

THE annual convention of the Missouri Association of Public Utilities will be held this year at the Elms Hotel, Excelsior Springs, Mo., on April 17-19. The membership of the Association includes virtually all of the privately owned electric, gas, and water companies in Missouri.

Among the speakers will be: Col. Willard Chevalier, New York City, publisher of *Business Week*; Elmer F. Schmidt, chairman, Natural Gas Section, American Gas Association, Dallas, Texas; W. J. Amoss, New Orleans Public Service, Inc., New Orleans, La.; R. M. Winsborough, Middle West Service Co., Chicago, Ill.; Charles T. Evans, Arkansas Power & Light Co., Little Rock, Ark.; George M. Burns, director, Kansas City (Mo.) Safety Council; O. H. Day, director, vocational education, Kansas City (Mo.) Public Schools.

Some of the subjects will be: "Business Faces the Forties," "Gas Is Moving Forward," "What the Customer Thinks," "What About Fluorescent Lighting?," "What Do I Sell?," "Promoting Public Relations Through Safety," "The Workman—Inspecting His Habits."

All available past presidents of the Association will be seated at the head table as guests of honor at a Get-Acquainted Luncheon at noon on Thursday. President E. H. Lewis, Webster Groves, Mo., will preside.

A statewide speaking contest for employees of electric and gas companies in Missouri for cash prizes will be held on the evening of April 17. Eight companies will have contestants. The subjects will be: For women, "Utility Service, the Labor Saver"; for men, "Let's Know Our Business."

W. B. Head, Jr., Missouri Public Service Corp., Warrensburg, Mo., will act as chairman at an open forum on Thursday afternoon for the discussion of timely utility problems. A safety meeting on Wednesday afternoon under the auspices of the Accident Prevention Committee will include a one-act playlet, "A Court of Accident Investigation," followed by a round-table discussion of accident prevention.

An entertainment program for ladies is being arranged by committees under the direction of Mrs. Ben C. Adams and Paul C. Ford of Kansas City.

Head Gas Distribution System 25 Years

G. W. L. R. Travis (left) and C. C. Simpson, Jr.

FEBRUARY 1 marked an unusual anniversary in the gas distribution department of Consolidated Edison Company of New York. On that day C. C. Simpson, Jr., and G. W. L. R. Travis completed twenty-five years as engineer of gas distribution and as assistant engineer of gas distribution, respectively. They were both appointed to their present jobs on February 1, 1915.

At the start of this twenty-five-year period these two men had jurisdiction over 1,467 miles of mains and a department of 643 employees. At present there are more than 2,509 miles of mains and more than 1,300 employees. The number of gas services grew from 128,925 to 191,584.

In this period Messrs. Simpson and Travis have been instrumental in introducing in distribution work many types of air power tools and mechanical equipment. There has also been considerable improvement in the methods of pumping drips and in locating leaks in the System.

Mr. Simpson joined the company in 1904 and Mr. Travis joined it in 1911.

Accounting SECTION

F. B. Flahive, *Chairman*
E. N. Keller, *Vice-Chairman*
H. W. Hartman, *Secretary*

Spring Accounting Conference Offers Strong Program Covering New Developments

F. B. Flahive

EMPHASIZING fundamental problems facing today's accountant, the program for the Spring Conference offers many opportunities for keeping abreast of new developments in this branch of the gas industry. Sponsored by the Accounting Section of the American Gas Association under the chairmanship of F. B. Flahive, of the Columbia Gas & Electric Corp., New York, the conference will take place April 11 and 12 at the Greenbrier Hotel, White Sulphur Springs, W. Va. This is the second accounting conference staged at this location in recent years and is expected to set a record in interest and attendance.

"Original Cost" Symposium

No function has been overlooked by the Program Committee and delegates will find ample opportunities for unburdening ideas, discussing mutual problems and gathering information on their favorite controversial subjects. An example of what is in store for the visiting accountants may be found in the treatment of the problem of original cost. This important and timely subject will be thoroughly explored from four angles: regulatory, management, legal and engineering. The customer accounting and customer relations groups have also scheduled meetings of unusual interest centering around questions of outstanding interest to the industry.

A glance at the program below will reveal many compelling reasons for attendance. The high calibre of the speakers and their prominent positions in the industry assure authoritative discussions of the most vital problems. A special attempt is being made by the Program Committee to secure the attendance of executives as well as the rank-and-file employees so that all viewpoints will be well represented in the discussions.

Enough has been said about the program but little about the place. White Sulphur Springs offers delightful surroundings with excellent accommodations, and healthful diversions at the proper time. The business meetings have been arranged for mornings and evenings, thus allowing free afternoons for golf, tennis, horseback riding, hiking or just relaxing against one of the most beautiful backgrounds Nature has to offer. Fine meals and superb service complete a combination that is difficult to equal anywhere.

Following is the complete program:

THURSDAY MORNING

9:30 A.M.

General Sessions

OPENING REMARKS, Francis B. Flahive, Chairman, Accounting Section, American Gas Association.

YOUR ASSOCIATION, Major Alexander Forward, Managing Director, American Gas Association.

REMARKS, Walter C. Beckjord, President, American Gas Association.

ADDRESS OF WELCOME, Hon. Alexander M. Mahood, Past President, National Association of Railroad and Utilities Commissioners, Charleston, West Virginia.

ORIGINAL COST OF UTILITY PROPERTIES. Regulatory Viewpoint, Charles W. Smith, Chief, Bureau of Accounts, Finance and Rates, Federal Power Commission.

Management Viewpoint, Speaker to be announced.

Legal Viewpoint, Stoddard M. Stevens, Jr., Partner, Sullivan & Cromwell, New York City.

Engineering Viewpoint, Stuart F. Kosters, Stone & Webster Engineering Corporation.

FRIDAY MORNING

9:00 A.M.

General Sessions

ORGANIZED ACCOUNTING EFFORT, Bernard S. Rodey, Jr., Chairman, General Accounting Committee, Edison Electric Institute.

REMARKS, C. W. KELLOGG, President, Edison Electric Institute.

JOB STANDARDS, R. R. Blackburn, Southern California Gas Co.

RECENT DEVELOPMENTS IN ACCOUNTING PRINCIPLES, Carman G. Blough, Manager, Arthur Andersen & Co. (Formerly Chief Accountant S.E.C.)

PENSION FINANCING, H. Walter Forster,

The Greenbrier Hotel, White Sulphur Springs, setting for the Spring Accounting Conference

President, Towers, Perrin, Forster & Crosby, Inc., Philadelphia, Pa.

MAKING GOOD WITH THE CUSTOMER, E. M. Tharp, Vice President and General Manager, The Ohio Fuel Gas Company.

FIRE AND EXPLOSION HAZARDS AND THEIR PREVENTION, T. Z. Franklin, Manager, Special Hazard Department, Automobile Insurance Company, Hartford, Conn.

COMMITTEE REPORTS

THURSDAY EVENING

8:00 P.M.

Conference Sessions

GENERAL ACCOUNTING CONFERENCE

Two and one-half hours opportunity for open discussion of your most troublesome problems.

C. E. Packman, Chairman, General Accounting Committee, Presiding.

INTERNAL AUDITS OF CONSTRUCTION

A closer tie-in between the books and physical construction.

SURPLUS—CAPITAL AND EARNED

Where is the dividing line?

PLANT ACQUISITION ADJUSTMENTS

Some thoughts on and experiences with this perplexing subject.

S.E.C. ACCOUNTING REGULATIONS S-X

Some additional requirements and their implication.

SALES STATISTICS

JOINT CUSTOMER ACCOUNTING AND CUSTOMER RELATIONS CONFERENCE

Two and one-half hours opportunity for open discussion of your most troublesome problems.

E. N. Keller, Vice-Chairman, Accounting Section, Presiding.

CUSTOMER ACCOUNTING ACTIVITIES

E. M. Alt, Chairman, Customer Accounting Committee.

CUSTOMER RELATIONS ACTIVITIES

H. R. Flanegan, Chairman, Customer Relations Committee.

THE METER BOOK

Is there a substitute for meter reading sheet?

CUSTOMER RELATIONS FROM THE WOMAN'S VIEWPOINT

A survey of utilities' commercial services.

UNIT VS. STATION PLAN OF CUSTOMER ACCOUNTING

Some conclusions after a trial of both plans.

CUSTOMER REACTION TO "FAST METER" REFUNDS

How are customers' criticisms of present practices satisfied?

PROPER TITLES FOR EMPLOYEES WHO MEET CUSTOMERS

Is the importance of the individual enhanced in the eyes of the customer by a better title?

BANKS AND OTHER AGENCIES AS BILL PAYMENT POINTS

Is it necessary to provide payment agencies other than Company offices for customers' convenience?

CUSTOMER ACCOUNTING FROM THE CUSTOMER'S VIEWPOINT

FRIDAY EVENING

8:00 P.M.

Conference Sessions

OPEN FORUMS

Informal open Committee Conferences continued from Thursday evening for discussion of problems coming under the scope of various groups, to be held under the direction of

GENERAL ACCOUNTING COMMITTEE
CUSTOMER ACCOUNTING COMMITTEE
CUSTOMER RELATIONS COMMITTEE
PROPERTY RECORDS COMMITTEE

Each Committee has lined up a number of important and timely subjects, allowing opportunity, however, for presentation of other topics from the floor.

All delegates to the Conference are invited to these meetings.

COMMITTEE MEETINGS

Meetings are contemplated for a number of the Section's Committees, including joint meetings with the corresponding Committees of the Edison Electric Institute.

Book Reviews

Statistical Thermodynamics by R. H. Fowler and E. A. Guggenheim. Published by Cambridge University Press, England; The Macmillan Company, New York, N. Y.

The scientific student should be grateful for the comprehensive mathematical analysis of the thermodynamic properties of matter in bulk which this new book makes available, but its interest is not only for the student since the text provides many useful thermodynamic formulas and new data for certain heat functions used in the gas industry.

On the other hand, these valuable features of the book are offset in part by the necessity to treat the subject with relatively complicated mathematics. For the engineering profession, many of the mathematical operations will be difficult, but for the scientific workers, this should be no stumbling block.

The book is the first extensive exposition making full use of all available á priori evaluations of thermodynamic functions. In this, the book differs from standard thermodynamic texts in which measurements are the usual bases of departure. The authors thus indicate that they are limited to substances or phases of not too great a complication. But once the laws of thermodynamics have been derived, full use of them is made whenever desirable in developing the balance of the topics. This, they feel, is one of the new features of the book. While this is undoubtedly true, it is also one of the features which tends to make the book's primary interest to the scientific-minded.

For the American reader, it covers the advances made in thermodynamics since the publication of Lewis and Randall's "Thermodynamics" in 1923. Fowler and Guggenheim's book is not a text book in the ordinary sense of the term because it does not confine its approaches to the limited grasp of the ordinary student. This book embraces a larger field and brings the reader the entire background upon which the advanced science of thermodynamics rests.

The book is large and costly, for its 700 pages sell for $9.50 but, at the same time, it is one of the most beautifully printed scientific books, and it has already excited the admiration of printing experts who have marveled at its splendid presentation of the difficult mathematical formula. Its readability does much to assist the reader in his study.

The book divides into fourteen chapters of which many are of great interest to the gas industry, namely, those dealing with the permanent perfect gases and the imperfect gases; the chapters devoted to liquids and solutions; a fascinating chapter dealing with surface layers and their phenomena and, finally, a section on chemical kinetics which is somewhat outside the scope of the title of the book but which is included because of its connection with the problems of physical chemistry with which the book deals.

The book is moderately well indexed. It is entirely written in the metric system, no conversion to customary engineering units being provided.—C. George Segeler.

Boost Gas Baking

IN a double page spread entitled "Is There a Baker in the House?," written by Kathleen Robertson and contributed to by Ruth Soule, director of home service, The Brooklyn Union Gas Company, the April issue of *McCall's* carries an interesting presentation on modern gas ranges. As the title implies, emphasis is placed on the performance and convenience features of modern gas range ovens.

Regional Conferences Highlight Gas Sales Practices and Problems

- **During the month of February, the Commercial Section of the American Gas Association sponsored three regional gas sales conferences in different sections of the country. These meetings were the Southern-Southwestern at Hot Springs, Ark., the Mid-West at Chicago, Ill., and the Eastern at Pittsburgh, Pa.**
- **In addition to coordinating the national sales efforts of the gas industry, these meetings brought to light many of the most productive sales promotional practices of local companies. On the following pages are presented brief excerpts from a few of the outstanding papers. Copies of the complete papers are available at Association headquarters.**

Prestige Value of Automatic Gas Water Heating

By W. L. HUTCHESON

Manufacturers Light & Heat Co., Pittsburgh, Pa.

W. L. Hutcheson

THE symbol of gas service is the gas appliance. As the intricate machinery of a fine automobile is identified by a distinctive radiator design, or the policy of a grocery chain is interpreted by the behavior of the delivery boy, so, for the average person, the gas range or the gas water heater is the tangible evidence of gas service.

If the appliance is bright and shiny, and works without undue bother or attention, the consumer's opinion of gas service will be favorable. But if the appliance does not work well, or if its appearance suffers by comparison with other home equipment, the opinion of the gas company as a modern, efficient organization is likely to suffer.

This is particularly true of the gas water heater. An old, uncontrolled tank heater and a rusty tank neither look very well or work very well. Water may be too hot, or too cold, or too rusty. There may not be enough hot water to go around, or many other situations may arise which direct cuss words toward the gas water heater, and so indirectly toward the gas company. That the old range boiler, with its inefficient burner, conveys the impression that the gas company is not modern, goes without saying.

And, justly or unjustly, this combination of poor service and poor appearance does tend to reflect on the policy of the company. Gas tank heater service is poor, therefore gas service is poor. The tank heater looks old and stodgy, therefore, gas is a fuel that's old and outmoded.

A modern, automatic water heater can do much to reverse this feeling, for its appearance is modern and, in the case of automatic storage systems, the enameled jacket or cabinet compares favorably with the refrigerator or other appliances. The service is completely automatic; perfectly heated water flows at every turn of the faucet; the effect of such service upon the good will of the gas company is certain to be great.

The increasing tendency—made possible by gas heating—to convert the basement into a recreation room, also serves to emphasize the factor of appearance of the gas water heater.

Heating Multiple Dwellings with Gas

By GEORGE DUANE

Dayton Power & Light Co., Dayton, Ohio

THE heating of multiple dwellings with gas insofar as heating goes, is not new, but is something we have all attempted to do more or less, over a long period of years, and due to not having anything else to offer, in the majority of cases we have used central boilers. However, in some cases of heating three- and four-family buildings, warm air furnaces have been used after a fashion, with all furnaces placed in the basement. Today, we have equipment which can entirely change the method of applying heat to these multiple dwellings, and it is on this that all statements I make hereafter will be based.

First, let us see what our approximate market in this particular field would have been in 1939 had we gone after it in our usual energetic manner. This will bring home the realization that we have been doing a very meager job in this particular field. From Dodge reports I have gathered the following. During the year 1939, in the section of the country which we are mostly interested in here, namely, Pittsburgh, Cleveland and Cincinnati, there was expended a total of thirty-two million dollars for apartment building only, and when this is broken down into dwelling units, we find a total of eight thousand dwelling units that construction contracts were let for in 1939. In the major portion of that territory, there is little difference in the gas rates. This should have been our potential field in multiple dwellings for the year 1939. What portion of it did we obtain? Frankly, a relatively small percentage of it.

Let us assume that each of these eight thousand dwelling units were heated with gas-fired equipment, and used an average of one hundred thousand cubic feet of gas each. That would represent a load of eight hundred million cu.ft. of gas for heating only, per year. The year 1939 was not a peak year in this division of building;

therefore this eight hundred million cu.ft. is not our final potential in this market, per year.

The figures just stated are exclusive of any U.S.H.A. projects. This eight hundred million cu.ft. potential, would be far more satisfactory business, so far as the various problems of distribution are concerned, and your investment to obtain this business would undoubtedly be considerably less than that necessary to obtain this same amount in individual homes.

Public acceptance—a necessary feature in any sales program—is going to be a little more difficult to obtain in this field, but it can be obtained, and I say this with all due respects to the contrary. It is going to require that your architects be kept informed on what is going on, and by this I do not mean pamphlets, circulars, and various other mailing pieces. If necessary, take a specific case in a distant city, tear it apart, convert it to your own gas and rates, and tell them about it.

Quite a good-sized factor we have found in our work in this field, has been the individualized control. If there are two hundred families, they can still have whatever temperature they desire, because of individual thermostats for each family, whereas with the central heating plan system, this is impossible. Also we obtain the benefit of the heat generated within the dwelling itself; by the cooking and lighting load, and of people. This is excessive heat where the central plant is used, and is in part at least the cause of windows being opened.

It is well to have in mind when lining up equipment, that as far as possible, it should be standardized. By this I mean if you have a sixty thousand B.t.u. requirement, and that proves to be your largest for the entire project, put sixty thousand all the way through if possible, changing your orifice sizes and your pulley on blowers if it is necessary to cut down. The thought I want to impart, is that in doing this you cut down the amount of material necessary to be carried to keep these jobs in service, and you do not have a multiplicity of motors and what not stacked up against you in your maintenance cost, which after all, is a factor to the owner of the buildings.

Old Gags in New Clothes

By DAVIS M. DEBARD

Vice-President, Stone & Webster Service Corp., New York, N. Y.

Davis M. DeBard

I WOULD like to relate the experiences during the last five years of one gas company, with which I am familiar. This company serves a progressive industrial city; has about 24,000 meters. Some five years ago this company's public relations were very poor. The employees were not too happy; the display room was not attractive; the earnings were poor; the sales of appliances were poor; and there was little or no spirit of get-up-and-go about the organization.

Progress and Prosperity

Certain personnel changes were made, rearrangement of the displays and decorations of the showroom were brought about and improvement immediately was noted. To make people more conscious of the gas company, it was decided to hold an Open House for four days, inviting the customers to come and visit the company. On display were not only the appliances but meters, piping, repair men to show how adjustments were made, and everything about the company's business was put on display. Girl Scouts served coffee and sandwiches and it was surprising the number of people who accepted the invitation to come to the Open House. Later the first Old Stove Roundup was held with two or more bands, floats of both company and dealers, cowboys, etc. This proved so successful that a number of dealers who had previously not handled gas appliances decided that they wanted to get on the Band Wagon and join the Parade of Progress.

From that day the sale of appliances and the increase use of gas has continued upward, until today, the sales of gas appliances show a 40% increase over the previous year. The gross earnings and net earnings of the company have increased substantially and what used to be a company of only pipes—pressure—and some perspiration, today is a company of pipes—pressure—progress—and prosperity. The spirit of the organization is of the best and while formerly many were working for just their salary, today they are working for both their salary and the satisfaction which one gets out of work well done. The community classes this gas company as a progressive citizen.

This instance throughout the United States has been duplicated in other places, but as an industry we must expand our use of modernization, improved displays, more pep, if we are to keep pace in this rapidly changing world with our competition for the consumer's dollar.

Selling Residential Gas Today

By C. W. GALE

The Knoxville Gas Company, Knoxville, Tennessee

C. W. Gale

WHEN the federally subsidized Tennessee Valley Authority program was inaugurated in the summer of 1933, the Knoxville Gas Company took stock of its situation and made plans to protect its residential load, the nucleus of its business. We prided ourselves in always having given our customers the best of service but steps were taken to improve it wherever possible.

We also began a series of tests to determine whether or not the efficiency of utilization could be increased on domestic gas ranges and automatic storage water heaters. The results of these tests were almost startling. By raising the top burners of gas ranges, gas consumption to perform a specified cooking operation could be reduced as much as one third. To obtain the careful adjustment necessary an additional gas pressure governor was installed on the range with a fixed orifice for each top burner and for the oven burner. With a uniform 500 B.t.u. manufactured gas, a constant pressure at the manifold and with orifices fixed, it is a relatively simple matter to fix the B.t.u. input to each burner by use of a flow meter.

Now this may sound like a technical discussion instead of a sales talk but it has a tremendous bearing on customer satisfaction. We inaugurated a program of re-equipping every new or used range which subsequently left our warehouse for installation. In addition, our test floor check-up included a heating up and holding test on the oven of every range and a thorough check on the oven heat control of every range before it went out. This policy is being followed today and has eliminated all "tear-downs" on the customer's premises and most preliminary adjustments in the presence of the customer. There are now less baking failures, less calls on our Home Service Department and less returns occasioned by some dissatisfaction. Our experience has been the fore-runner of some of the CP specifications and we hope to see further improvements made.

While the foregoing program was being put in motion we succeeded in getting from an approved manufacturer an automatic storage water heater with improvement in thermal efficiency of about 10 points or approximately 16⅔ per cent. This heater was

adopted for promotion and sale. A year or so later, largely through the efforts of the Birmingham Gas Company, working with the Servel Electrolux Company, considerable improvement in efficiency of gas refrigerators was made.

Now the point I make is to leave no stone unturned to put into the hands of sales departments and subsequently to your customers the most efficient and serviceable gas appliances you can secure. In this manner you will best keep the wolf of competition away from your door. Performance is what counts and that is why we have tied in heavily with the CP Range Program.

Some sales managers will say that this is a "gold plated" policy and will result in many sales being lost to prospects in the lower income brackets. To preclude this possibility we carry two or three models of non-CP ranges on our floor and leave final determination to the customer, guided by our salesmen. As a result, 50% of our range sales in 1939 carried the CP seal.

Speakers at Southern Gas Association meeting held recently in Hot Springs, Ark., take part in a "symposium" on a refrigeration market survey. In the picture, left to right, are: Prof. Harold G. Murphy, School of Business, Emory University, Atlanta, Ga.; H. Carl Wolf, president, Atlanta Gas Light Co., and Lyman Hill, director of sales research, Servel, Inc.

Water Heating in the Home

By CHARLES F. TURNER

The East Ohio Gas Company, Cleveland, Ohio

Charles F. Turner

IF the electric utilities continue to put electric ranges on our lines they must, of necessity, obtain some additional business of a type which will iron out the peaks formed by electric ranges. This additional business, without a doubt, will come from water heating. Old, inefficient water heaters are vulnerable for replacement by electric water heaters, particularly where the electric rate is attractive.

In view of the foregoing we have felt it very necessary to stimulate the sale of automatic, storage-type water heaters and, particularly, the underfired type. While we are not a merchandising company, we have placed on sale in most of our divisions modern-type water heaters selling them "off the shelf," so to speak.

We have no salesmen out promoting or selling them from door to door or following up leads. We show them in our display room in the same manner that we show gas ranges, merely to stimulate among our customers an interest in under-fired, automatic water heaters. We offer to finance them through our dealers for 10% down with the balance payable in twenty-four equal monthly installments.

In those of our territories where the dealers are willing to cooperate with us, we put on each spring a cooperating advertising campaign featuring water heating. During this campaign automatic water heaters are sold at a reduced price, or with an extra large trade-in allowance. We are endeavoring to interest specialty sales organizations in selling automatic water heaters and have been rather successful in several of our territories.

For example, in one town of approximately 40,000 meters, about 2,000 automatic water heaters have been installed during the past two years, largely through the efforts of two specialty sales organizations. It has been our experience that in only a few cases have the plumbers or their organizations cooperated in these sales campaigns; it seems to us that if we expect to do a real job of selling automatic water heating it must be done through specialty sales outlets employing a considerable number of salesmen. On the whole we have found this plan to be the most successful way of replacing the old water heating equipment with modern, efficient types.

Because of the relatively low gas rates prevailing in our territory we have not found it necessary to promote the use of slow recovery heaters. It is our belief that satisfactory hot water service is best obtained with a storage-type heater embodying a tank of ample size for the requirement. This may result in fewer sales but we hope that customer satisfaction resulting from an adequate supply of hot water at all times and at a reasonable cost will encourage others to do likewise and thus help us to maintain the high percentage of the business we now have.

Control of Repeaters and Meters

By M. THELMA BLY

Wisconsin Power & Light Co., Fond du Lac, Wis.

M. Thelma Bly

IN looking for a way to teach as many of our customers as possible how to save money with their gas appliances and make better satisfied users and boosters for our service, we decided to hold a cooking school every Wednesday afternoon at 2 o'clock and invite a different group of customers each week.

The plan is working better than we had expected and we are now entering the third year of operation. It works something like this: On Friday of each week we send a simple mimeographed invitation on colored paper along with two or three hundred of the service bills that are being delivered that day. The customer is invited, along with her friends and neighbors, to the free cooking school to be held at 2:00 P.M. the following Wednesday in our kitchen.

These schools begin in September and last until July. The same program is repeated each and every week until invitations have been sent to the entire list of our customers; then a change of program is made. The first year we stressed saving of gas and money by cooking on the surface of the range with smaller quantities of water and baking quick breads and refrigerator rolls. The second year we continued to stress the economy of making refrigerator rolls and simple, quick breads, and in addition showed how to buy and prepare inexpensive cuts of meat. At every school I prepared an inexpensive meal in the broiler. The cooking of vegetables with small quantities of water was continued.

A card is filled out by each customer toward the end of the demonstration for the drawing of a simple door prize. On this card we ask what her next purchase will be and the date of birthday so our salesman can remind her husband of her desire for the appliance mentioned.

Now the group has gathered and school is in progress. I'd like to hit the high lights of my program.

Over the CP range is placed a meter that has a face 18 inches in diameter. When the red hand moves around the face completely one cubic foot of gas has been used. Six and two-thirds times around and a penny's worth has been used. This I explain as I place on a standard burner a covered 3 quart kettle of potatoes to which one cup

of water has been added. Then I turn the burner on high and wait for the steam to appear around the cover. Here I explain "peeking" and ask them if they have ever taken off the cover of a kettle, gone to the kitchen table for a fork, tested the potato, carried the fork to the sink, and then come back and put on the cover. They agree with me this peeking increases cooking cost and a loss of water so, if they peek often, they'll also increase cooking time, which means ar increase in the gas bill.

By the time I am through and the steam appears, I point to the meter face again and ask them to watch the speed of the hand when I turn the burner under the potatoes to simmer. The hand barely moves and I explain that it takes three times as long to use or spend that penny when they use the simmer flame, and if they cook potatoes this way once a day for a month, they can save 50 cents, or in two months the price of an extra pair of hose.

The meter also is used with the oven to show how the regulator actually saves money. The hand will barely move when baking temperature has been reached. Here I can show the increased cost of peeking by actually peeking. When I open the oven door the burner flame increases and the meter hand starts racing around until the set temperature again has been reached.

When some one in the audience finishes the timing the potatoes (20 minutes on simmer) I drain them, showing the same cup of water I started with.

This year I have been using the kettle one-half full of potatoes, with either onions, carrots or cabbage on top, still using one cup of water, proving that they can cook all their vegetables in one kettle with no mixed flavors if they "don't peek."

Cooking of eggs, using 4 tablespoons of water in a covered kettle four minutes with the burner on high and four minutes off, is one of the most effective means I have found of using the meter and telling how to save by cooking the new easy way on the modern CP gas range.

So, by measuring their ingredients accurately, letting the regulator measure their heat, and clock to measure their time, they'll all have perfect results at a reasonable cost if they don't peek.

Gas Refrigerator Sales Leaders Win National Recognition

B. T. Franck

EXCEPTIONAL gas refrigerator sales have placed 25 gas companies and 150 salesmen in the February group of winners in the current year-'round gas refrigeration sales drive sponsored by the American Gas Association, it was announced by Bernard T. Franck, chairman of the Refrigeration Committee.

There were 65 salesmen who, in addition to their February cash awards, received a bonus of 20 per cent extra of the month's award for closing four or more sales in January.

The 25 gas companies which have received the distinction of being known as the "February Leaders for the Month," are as follows:

In the "Greatest Number of Installations per 10,000 Meters" group, the following companies are winners in their divisions:

Division 1—Washington Gas Light Company, Washington, D. C.,
Division 2—Brooklyn Borough Gas Company, Coney Island, N. Y.,
Division 3—Lynchburg Gas Company, Lynchburg, Virginia,
Division 4—Consumers Power Company, Lansing, Mich., and in
Division 5—The Gas Service Company, Merriam, Kansas.

Winners in the "Greatest Total Installations Reported" are:

Division 1—The Brooklyn Union Gas Company, Brooklyn, N. Y.
Division 2—Milwaukee Gas Light Co., Milwaukee, Wisc.,
Division 3—Atlantic City Gas Co., Atlantic City, N. J.,
Division 4—Louisville Gas & Electric Co., Louisville, Ky.,
Division 5—Macon Gas Co., Macon, Ga., and in
Division 6—Virginia Gas Distribution Corp., Staunton, Va.

The following companies with their respective divisions are winners in the "Greatest Per Cent of Increase in Installations Over the Reported 1939 Installations":

Division 1—Kings Appliance Corporation, Brooklyn, N. Y.,
Division 2—Western United Gas & Electric Co. (Downers Grove Div.) Aurora, Ill.,
Division 3—Conewago Gas Company, Hanover, Penna.,
Division 4—Kansas City Gas Company, Kansas City, Mo.,
Division 5—Natural Gas Company of W. Va., Alliance, Ohio, and in
Division 6—The Manufacturers Light & Heat Co., Follansbee & Wellsburg, W. Va., Hoosier Gas Corporation, Vincennes, Indiana, (Tie).

In the "Greatest Per Cent of Replacements of Outmoded Automatic Refrigerators Against Total Installations Reported," the winning companies with their respective divisions are as follows:

Division 1—Kings Appliance Corporation, Brooklyn, N. Y.,
Division 2—Cambridge Gas Light Co., Cambridge, Mass.,
Division 3—Roanoke Gas Company, Roanoke, Va.,
Division 4—The Manufacturers Light & Heat Co., Steubenville, Ohio, and
Division 5—The Manufacturers Light & Heat Co., East Liverpool, Ohio.

The winner in the "Greatest Number of Individual Retail Installations Sold at the Prevailing Retail Prices and under the Policies of Each Company" is the Southern California Gas Co., Los Angeles, Calif.,—Division 1 (The only eligible division).

The winner in the "Greatest Number of Installations Per 1,000 Meters," class (which was limited to the sixth division), is the Georgia Public Utilities Company, Aiken, S. C.

Refrigeration Campaign Offers Rich Rewards

"PIONEERS OF PROGRESS," symbolizing new horizons and new frontiers for gas refrigeration in the current year-round sales campaign sponsored by the American Gas Association, is the theme for the second quarter drive which covers the months of April, May and June. Twenty-four cash prizes for the winning gas utilities to be used for Victory Dinners for members of their sales forces; a handsome scale model of a Pan-American clipper ship; six "honor flights" for those salesmen who lead their division in sales, and monthly and quarterly cash awards for top salesmen, will be the rewards for winning gas utilities and salesmen in the second quarter drive, it has been announced by Bernard T. Franck, chairman of the American Gas Association Refrigeration Committee.

"A cash award will be given to each of the twenty-four winning gas companies in the Spring and Summer portion of the current year-'round campaign to defray the expenses of a Victory Dinner for members of its winning sales force," Mr. Franck said.

"There are also six 'honor flights' to be awarded to the six salesmen who lead their division in sales for the Spring and Summer campaign. These six 'sales pilots' will make the Bermuda trip in a Clipper Ship along with the twenty-four representatives of the winning gas companies who have won the 'Annual Best Performance Award.'

"Each of the home service departments of the winning companies will receive a cash award in the second quarter campaign.

"Twenty-four large, handsome models of a Pan-American clipper ship will be awarded to the companies which lead in their respective divisions in the second quarter campaign."

Industrial Gas SECTION

F. T. RAINEY, *Chairman*
H. CARL WOLF, *Vice-Chairman*
E. D. MILENER, *Secretary*

Load Building Through Packaged Industrial Equipment

By A. H. KOCH

Surface Combustion Corp., Toledo, Ohio

THE manufacturers who produce utilization equipment for gas fuel have not been backward in adopting mass production and standardization. This has been especially true in the domestic field where it is possible to obtain outlets in large volume for such appliances as gas ranges, water heaters, conversion burners, furnaces, boilers and refrigerators.

In the industrial branch of the gas industry volume sales do not run into as large figures. Nevertheless there are many pieces of equipment which are purchased in sufficient quantity to make standardization possible. The producers of gas-burning industrial equipment have standardized to a marked extent and are passing on to the gas industry the many benefits mass production and duplication provide.

Industrial equipment is divided into three general classes in accordance with the demand and degree of standardization possible.

First—Standard Equipment:

This group represents that equipment which is used in sufficient amounts so that it can be standardized and sold as a packaged unit.

Second—Modified Standard Equipment:

In this group is that equipment which is fundamentally standard but which is supplied with certain modifications to improve its use for a particular application.

Third—Special Equipment:

Industrial equipment—usually furnaces—which must be designed to do a particular operation and which, in most cases, will be duplicated rarely or never, are placed in this group.

Through standardization and exact duplication in the production of gas utilization equipment for industrial purposes, as in the production of automobiles, costs can be materially reduced. The necessary engineering work which must be done to prevent errors and make possible replacement of parts at some later date is costly. If but one furnace is built from a certain set of drawings, this furnace must bear the entire engineering costs. If a hundred furnaces can be built from that set of drawings, each furnace must bear only one one-hundredth of the engineering costs.

In actual production, if a quantity of duplicate parts is produced, the cost is materially reduced as compared to the cost of producing but one such part. Machines must be set up, which requires time and labor and which cost the same whether one part or a thousand parts are produced. If the demand is sufficiently great, jigs, fixtures and other forms of tooling can be justified and thus it is possible to save considerable in both time and labor, as well as to improve accuracy of machining.

Furthermore, production of a large volume of any particular part makes it possible to purchase material in larger quantities and obtain it at better prices.

Routing Simplified

The actual routing of the various component parts of an assembled piece of industrial equipment through the factory is greatly simplified if it is a duplicate of equipment which has been produced many times before. It is surprising to note how much time and money can be saved by a mechanic or bricklayer in producing duplicate units after the first two or three have been completed.

Figure one diagrammatically illustrates an analysis of how the various items which make up the price of a large oven furnace are distributed. In establishing the price factors for a standard furnace for this analysis, the engineering and pattern costs were distributed over 100 units.

If the full engineering and pattern costs must be charged against only one unit produced, this furnace would be considered as one of the "special" group.

If a standard furnace with some minor modifications could be used, the required engineering might be reduced about two-thirds. The pattern charges, if new patterns were required due to the modifications involved, would remain the same. A saving of about 12½% of the overall cost could be realized in this case.

If the design is completely standardized, the engineering and pattern charges are reduced 99% and the labor can be reduced about 5% which will result in an overall saving of about 25% of the price of the complete furnace.

The reduction in production cost with the resultant decrease in the price of the equipment due to standardization of design offers a decided sales advantage.

Standard or packaged equipment makes possible far more rapid deliveries of equipment. When filling an order for a standardized article, the manufacturer has all of the engineering and design work completed before the order is received. In most cases it is impractical to have more than one draftsman working on any particular design. It is, therefore, necessary to spend considerable time in engineering work on any order for other than a standardized article.

For equipment which has a large sales volume it is advantageous for a manufacturer to stock completed units. Shipment of such equipment can be made the same day that the order is received at the plant. Such rapid service, however, must of economic necessity, be limited to a reasonable number of units, and is always subject to prior sales.

Equipment which does not command a large volume of demand can, if standardized, be shipped within a short period of time. Although the equipment must be assembled, castings and other material which require a long time to obtain can be carried in stock. Careful planning by the manufacturer makes it possible to use the same castings for a number of different size units, thus reducing the cost of stocking parts. This is possible only through carefully analyzed standardization.

Mass Production Shortcuts

Mass production in the factory, coupled with the operators' being accustomed to handling duplicate equipment, reduces the time required in handling and assembling the parts of a complete piece of equipment.

Figure 2 illustrates graphically how standardization reduces the time required between receipt of order and date of shipment of a large oven furnace. The same furnace which was used for the cost analysis of Figure 1 was selected for this time analysis. The type of equipment materially varies the time required, but the particular equipment selected is an excellent example of average conditions.

The time required to design and detail

Presented before A. G. A. Conference on Industrial Gas Sales, Toledo, Ohio, March 28.

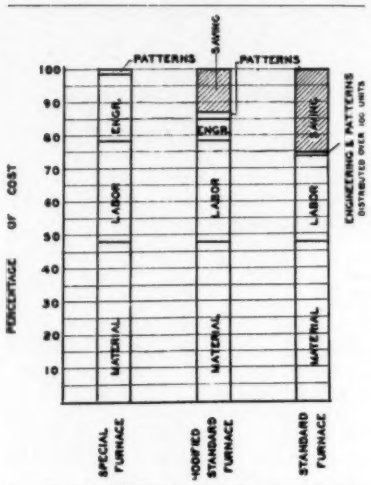


Figure 1. Price analysis

such a furnace is about 15 days. If no material is in stock, about 15 days will be required from the time the necessary material is ordered until it is delivered to the manufacturer's plant. Actual production work requires about ten days, and an average of three days is required to dry the furnace, bring it to temperature, test it and allow it to cool for shipment.

If the furnace ordered is a standard unit, engineering is entirely eliminated and material is on hand, so production starts as soon as the order is entered. In thirteen working days the unit is ready to ship.

Production Time Schedule

For orders of standard equipment with minor modifications, an average of about five days is necessary to change the standard drawings and issue a revised bill of material. In practically all cases involving modification, castings and patterns must be changed, so a delay of about 15 days becomes necessary to obtain all necessary material.

However, the manufacturer, by careful planning of the engineering, can have it sufficiently completed so that after about three days material orders can be placed. Deviation from the normal plant routine requires additional handling of such orders and thus increases costs.

Production can be started before all of the material is received, but at least three days are required to process and assemble the material last received. Such procedure also upsets the plant routine and increases costs.

As shown in Figure 2, the time necessary to produce a modified standard piece of equipment increases the production time about 85% lengthening it to an average of 24 working days.

If the furnace ordered is of special design throughout and must be completely engineered, it is possible to order material after about five days of engineering work has been completed. However, production cannot start until all engineering is complete.

Therefore, the time of shipment is increased to about 28 working days, which is a 115% increase over the time necessary to make shipment if the unit has been standardized by the manufacturer.

Standardization and duplication of gas-burning industrial equipment offers the prospective purchaser a decided advantage in assurance of satisfaction. All standardized equipment has been built and tested in actual service. The operation of the equipment can be rated, charted and catalogued so that operating costs can be accurately predetermined before the purchase is made. Ratings need not be based on estimates but are based on actual results obtained.

Predetermined heat treating costs can be accurately checked by actual results being obtained with duplicate units which have been in operation for a period of time.

Equipment Is Flexible

Standardized industrial equipment is of necessity built to serve many purposes. Unless the manufacturers of such equipment built it with a wide range of flexibility, there will not be a sufficient market to economically justify standardization. This is of marked benefit to a user of such equipment. Should other plant operations change, the type of gas change, or if other factors make necessary a change in the heat treating equipment, standard equipment in practically all cases is sufficiently flexible to be easily readjusted to meet the revised requirements. This in itself is excellent insurance to a user against premature obsolescence.

Industrial furnaces of standard design are of relatively small and practical dimensions in accordance with most common requirements. For a plant subject to extreme seasonal fluctuations in production schedules, the use of a number of smaller furnaces instead of one large furnace offers a means of saving considerable in fuel costs during seasons of limited operation. Only the required number of units, each at maximum capacity and maximum efficiency, need be operated at any time. The fuel consumed per pound of material produced then remains constant irrespective of the plant production rate.

A famous automobile manufacturer has adopted the advertising slogan "Ask the Man Who Owns One." This slogan is an excellent guarantee in itself and is an assurance that each new machine is an exact duplicate of many which have been in successful operation. Duplicate standardized gas industrial equipment can be sold with the assurance that it is a tried and proven product. If convenient, a prospective purchaser can be shown an actual unit in operation, of which the one he will obtain is an exact duplicate.

Reference can be made to actual operating costs being attained with equipment built to exactly the same specifications.

Through the use of standard equipment wherever feasibly possible, the "Use the User" method of sales approach can be most successfully employed.

Packaged equipment is supplied by the manufacturer as a complete unit, which reduces the amount of labor required and cost of installation to an absolute minimum. Simple printed instructions are supplied so that the installation can be quickly and properly made. Easy means of adjustment are provided to take care of specific local conditions. All of these features make it possible for the purchaser to put the equipment into operation with a minimum of effort.

Repair parts for standardized equipment can be quickly obtained—in most cases directly from stock. This reduces maintenance costs and periods of non-production to the most desirable minimum.

Before considering how these advantages of packaged equipment can be applied to the building of gas load, a thorough consideration of the major industrial requirements of gas fuel should be made.

The major considerations or appeals of gas fuel for industrial purposes are: reduced costs, improved product and improved operation. The management of an

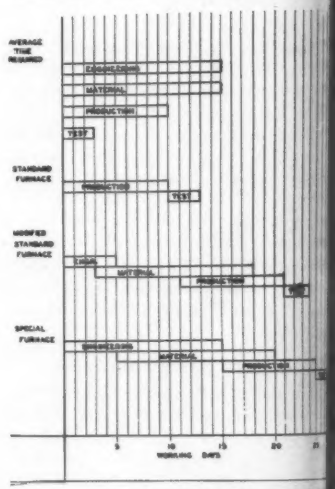


Figure 2. (Order to shipment) Time and

industrial plant will be interested in what savings can be realized. Practically all successful industrial gas sales have been on the basis of the economical appeal.

Actual fuel costs can be accurately determined by calculations based on established data. Labor saved through the use of gas fuel can be accurately determined. The reduction in rejects eliminated by gas fuel can be definitely established. These are tangible savings to which a definite dollars and cents value can be applied.

Other savings, such as improved product, improved working conditions, reduced equipment maintenance and so forth are purely of an intangible nature. The value which can be assigned to these savings must be estimated. The prospective purchaser must be convinced that these savings

and must be convinced that a reasonable dollar and cents value should be allowed for the intangible savings.

The total of all possible savings represents the economical advantage gas fuel offers to the industrialist.

The next consideration, after an appreciation of the savings has been firmly established, is the investment required to utilize gas fuel. This figure should include cost of the equipment required, cost of any change in plant layout, the cost of installation, and interest on the total investment.

From the total savings and the total investment an economic balance can be established. The investment, divided by the total yearly savings, establishes the period of amortization or the length of time necessary to write off the investment.

As a general rule, gas utilization equipment for industrial purposes has an estimated life of about ten years. Therefore, a proposed installation, the investment for which can be amortized in three years or less, represents to the user a great saving over a period of years. Prospects falling within this category should be very easily sold gas fuel.

A proposed installation which requires an amortization period of from three to six years represents an average prospect. Although considerably more sales efforts is required to sell gas fuel to this group, the chances of the prospect accepting gas fuel are still excellent.

Those prospects whose estimated savings are not sufficient to amortize the required investment within six years are very difficult to sell gas fuel. In this group fall those plants which do not warrant considerable sales effort.

Savings Chart

Figure 3 is a Savings—Amortization Chart from which an analysis of any prospective installation can easily be made. Estimate what the total yearly operating cost of the installation under consideration will be if gas fuel is used. Then determine the present cost of doing the operation, and from this figure establish the saving which can be realized. Finally, investigate what new equipment and changes will be necessary to convert the proposed installation to gum gas and the cost to make the conversion.

To use the graph, locate on the left ordinate the estimated yearly cost with gas fuel. Project a horizontal line through this point.

Select the point on the scale at the bottom of the chart which represents the savings to be realized and through this point project a vertical line upward. The location of the point where the two projected lines intersect, with reference to the inclined straight lines, establishes the percentage of saving possible.

From the point where the vertical line intersects the curved line representing the cost of the equipment required, project a line horizontally to the right. At the point

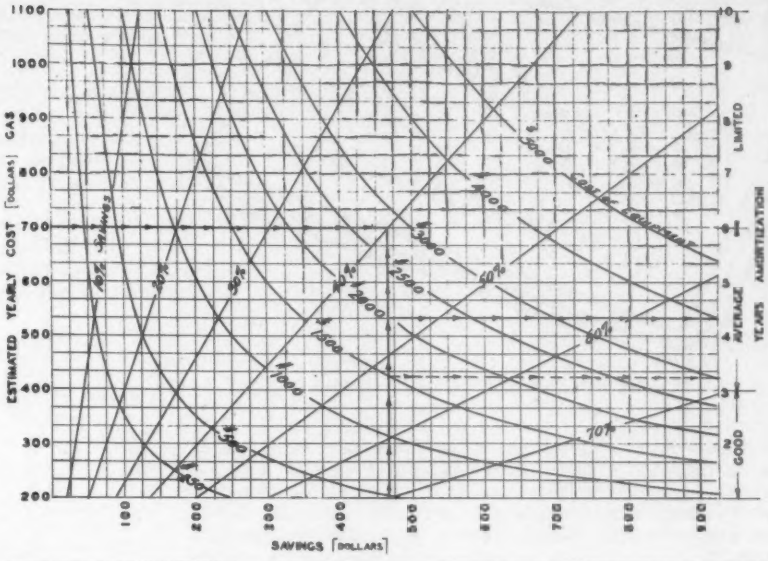


Figure 3. Savings—amortization graph

where this line intersects the right ordinate the period of amortization can be read.

The example illustrated in figure 3 is for a proposed installation which at present costs $1167 per year to operate with a competitive fuel. The estimated cost with gas fuel amounts to $700 per year. The savings is therefore 40% of the present costs. If the equipment required must be special and costs $2000, the period of amortization will be 4.3 years, or quite high in the average prospect group. If packaged equipment can be used, the cost will be reduced about 25% to $1500. The period of amortization will then be 3.2 years, or just barely above the good prospect group.

To reduce the period of amortization, either the savings must be increased or the cost of equipment must be reduced. Modern, well-designed industrial equipment will provide the highest efficiency and greatest savings. Standardized, packaged equipment will provide the best possible equipment at the lowest possible cost. Both of these fea-

(Continued on page 160)

Air Conditioning Meeting Features Gas Men

THE American Society of Mechanical Engineers called heavily upon industrial gas in order to make the most of its March 19 symposium on "Drying of Air and Gases," sponsored by the Process Industries Division of that Society and arranged by Arnold E. Weisselberg, prominent New York consulting engineer. The meeting was held in the evening at the Engineers Building, New York City, and was attended by over 70 process or air conditioning engineers. Both the speakers and those called upon for discussion at the meeting were predominantly gas men or manufacturers of gas-operated equipment—eight out of ten.

Chairman of the meeting was Eugene D. Milener, Secretary, A. G. A. Industrial Gas Section; while the three speakers were E. A. Windham, in charge of engineering, Air Conditioning Division, Surface Combustion Corp.; G. L. Simpson, vice-president and general manager, Pittsburgh Lectrodryer Corp.; and James C. Patterson, manager, Dehydration Division, Carrier Corp. (who was absent through illness, and whose paper was read by Harry W. Smith, Jr., director of industrial publicity, American Gas Association).

Subsequent discussions of the three papers were offered by W. F. Friend, Ebasco Services, Inc., Harold S. Birkett, The Brooklyn Union Gas Co., A. E. Skeats, Consolidated Edison Co. of New York, Inc., and Roy Scott, Surface Combustion Corp. Both Messrs. Simpson and Friend are members of the A. G. A. Joint Committee on Summer Air Conditioning of the Industrial Gas and Commercial Sections.

All topics revolved largely about the heat-operated equipment available for the drying of air and gases, particular emphasis being placed upon engineering considerations, economics, and the relative merits of various systems for different classes of work. That the program involved so many gas men, although its viewpoint was entirely impartial, reflects the leading role being played by our industry in the development of air conditioning for both process and comfort applications to all types of commercial and industrial enterprise.

Thanks to Lou Holtz, Bing Crosby, and Jack Benny, the latest slanguage is "Now you're cooking with gas!" It means exactly what "You're in the groove" or "Now you're talking" used to mean way back in '39. It might mean more than that to your commercial cooking prospects if *you* used the phrase cleverly.

♦

It's been a long time a-borning—but at last it appears that we have a line of *completely automatic gas-fired* doughnut machines (100 to 400 dozen per hour capacity) with which to offer greater labor savings and product control to our big baking customers. The new equipment also promises attractive fuel savings and other "plus" features over electric automatic equipment. Several big food chains are already interested. "Going Ahead" has manufacturer's literature on hand to send you if you want it.

♦

Of course you'll be in Atlanta on May 30 and 31, when the A. G. A. Hotel Restaurant and Commercial Gas Sales Conference moves south to learn a trick or two from the boys below the Mason-Dixon line. Your program will be along by the end of April—and (an advance tip) it's a powerhouse.

♦

May 6 to 12 is the National Restaurant Association's Nation Restaurant Week, and the idea is to sell the thought, "Go Food Is Good Health," to the public. Here's a chance to go your restaurant customers and let them know you're play their game. Perhaps you can propose a customer-health-pr tection theme tieing-in with that gas-fired sterilizer you've j sold; perhaps you can suggest invitations to customer inspecti of your niftiest all-gas kitchens; perhaps you can sell yo advertising department on a plug for the Week and a boost restaurant eating in your local newspaper advertising.

♦

Look up METAL PROGRESS, March 1940, page 284—a be proud! Says Matthew H. Mawhinney, prominent Consulti Engineer, in discussing Heating Mediums from 1915 to 194 *"Gas remains the only perfect fuel for all heating operation* Then, after you've had your glow of pride, show the page your metal industry prospects.

♦

There's no end to a good industrial gas man's ingenu Al Thurston (Cleveland) uncorked this one last week in h Industrial Gas Sales Conference paper on Open-Flame Heatin "Even one of our meat packers is making wonderful sugar-cure baked-hams by first boiling the ham, then covering it with sugar mixture and using a *gas-oxygen torch* to brown the sugar ham to the proper 'a la Barbeque' tint."

♦

Among the gas companies who will capitalize upon the ex value of your Industrial Gas Publicity Committee's pictorial splurge, "Beauty . . with Gas . . In the Bakery" (see center spread, A. G. A. MONTHLY, March) are Brooklyn Union an Atlanta Gas Light. Both feel that their baking customers ought to see the job—so they're mailing it with a little fancy-work o their own on the blank covers. Have you checked with you advertising geniuses on the matter?

INDUSTRIAL AND COMMERCIAL NATIONAL ADVERTISING FOR APRIL

The National Advertising Committee of the Industrial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full-page advertisements will appear in the trade and business magazines listed below during the month of April. These advertisements are prepared in cooperation with the Committee on National Advertising as a part of the Association's national advertising campaign.

General Manufacturing

INDUSTRIAL POWER	Free Sewing Machine Co., Rockford, Ill., gets out more work in less time with Gas in carburizing operations, has better temperature control and more space available to work.

Hospitals & Schools

MODERN HOSPITAL	Ford Hospital, Detroit, uses Gas ranges, broilers and other appliances to feed an average of 403 patients and 1,088 personnel daily.
AMERICAN SCHOOL BOARD JOURNAL	Bayonne High School, Bayonne, N. J., uses Gas for cooking two thousand meals a day for students; saves with low-temperature roasting.

Food Industry

BAKERS HELPER (Apr. 13) BAKERS WEEKLY (Apr. 6)	Rainbo Bread Co., Denver, Colo., uses Gas for all baking, as well as for steam broilers and space heating.
FOOD INDUSTRIES	Cora Lou Confectioners, San Francisco, Cal., produces 1,000 pounds of fine candy a day at lowest cost with Gas.

Hotels & Restaurants

HOTEL MANAGEMENT AMERICAN RESTAURANT	Crosby Restaurant, Cleveland, lives up to its famous name, using Gas for cooking, baking, steam generation, hot water heating, laundering, summer air conditioning, display lighting.
CHAIN STORE AGE (Fountain & Restaurant Section)	B/G Foods, Inc., San Francisco, na tional chain with a slogan "a meal a minute"—speeded by Gas cooking and baking from central commissary.

Processing Industry

CHEMICAL & METALLURGICAL ENG'G	O'Keefe & Merritt, San Francisco, fin all its enameling economically and efficiently with Gas and automatic ovens in making Gas ranges, circulating heaters, refrigerators.

Metals Industry

THE IRON AGE (Apr. 4) STEEL (Apr. 1) METALS & ALLOYS METAL PROGRESS INDUSTRIAL HEATING	Forsberg Manufacturing Company, Bridgeport, Conn., finds Gas gives economies in handling and materials, provides better products.

Ceramic Industry

CERAMIC INDUSTRY	O'Keefe & Merritt, San Francisco, fin all its enameling economically and efficiently with Gas and automatic ovens in finishing parts for Gas ranges, circulating heaters and refrigerators.

Technical SECTION

F. M. Goodwin, *Chairman*
D. P. Hartson, *Vice-Chairman*
H. W. Hartman, *Secretary*

Key Distribution Problems To Be Explored at Combined Convention and Conference

C. H. Waring

THE seventeenth annual Distribution Conference will be held in Houston, Texas, jointly with the convention of the Natural Gas Section, at the Rice Hotel, May 7-9, under the chairmanship of C. H. Waring, chairman, A. G. A. Distribution Committee. An interesting program will be presented which will appeal to gas men from both the manufactured and natural gas sections of the industry.

The program so far arranged for the Distribution Conference sessions is given below, and the tentative arrangement indicates the sessions at which the papers will be given. Complete printed programs will be supplied later from Association Headquarters.

There will be three papers from different sections of the United States on "Pipe Line Capacity" and "Methods of Calculating Flow of Gas in Distribution Networks" by authors who are well qualified. These papers will bring out different methods used and should provoke discussion from the floor.

Variety of Distribution Topics

Much work has been done during the past year in developing methods for accurate determination of "When Pipe Lines Are Cathodically Protected." The answer to this problem will be given. The problem of "Protection of Distribution Networks Within Cities" will be discussed. There also will be a paper on removal of impurities from gas. Another paper of interest to all will be one on housing developments and their effect on gas systems. Still another will deal with a recently discovered form of corrosion which has been suspected but never definitely proved. Accompanying this paper will be pictures which one man says, "are the best he has ever seen."

Under the general chairmanship of L. W. Tuttle, vice-chairman of the Distribution Committee, Round Table Luncheon Conferences, which have proven so popular in the past, will again be held. These luncheon conferences will discuss topics related to the general headings of Construction and Maintenance, Appliances and Appliance Servicing, and Meters and Regulators, under the leaders shown in the following program.

Experience has indicated that problems are more freely discussed in smaller group meetings where an informal atmosphere exists. To avoid large groups it has been decided to have two sections of the luncheon conference on Construction and Maintenance, and of the meeting on Appliances and Appliance Servicing.

The various committees of Technical Section have accomplished much during the past year and reports from the committees on "Cast Iron Pipe Standards," "Meter and Metering," "Pipe Coating and Corrosion," and "Pipe Joints and Pipe Materials" will be given.

Natural Gas Section Convention sessions will begin on Monday, May 6, and continue through Thursday, May 9. Further details of this program will be found elsewhere in this issue. The Tuesday morning general session and the Thursday sessions will be held jointly with the Distribution Conference.

TUESDAY, MAY 7, 9:30 A.M.

JOINT GENERAL SESSION—DISTRIBUTION CONFERENCE AND NATURAL GAS SECTION CONVENTION

Address of Welcome, Mayor of Houston.

"The Status, the Trends, the Future of the Natural Gas Industry," E. F. Schmidt, Lone Star Gas Co., Dallas, Texas.

"The Natural Gas Industry, 100 Years of Progress," Walter C. Beckjord, Columbia Gas & Electric Corp., New York, N. Y.

"The Company Program for the Sale of Summer Air Conditioning," C. R. Bellamy, Columbia Gas & Electric Corp., New York, N. Y.

"Institutional Advertising and Publicity," John H. Warden, Oklahoma Natural Gas Co., Tulsa, Okla.

"Federal Power Commission Procedure under the Natural Gas Act," W. A. Dougherty, Standard Oil Company of New Jersey, New York, N. Y.

This year's conference offers the distribution man the same opportunity for concentrating on his own problems as in the past when the meeting was held separately. All technical sessions have been so staggered that he has the unusual opportunity of also attending the natural gas sessions which include subjects that are related or similar to his own problems.

In the words of Chairman Waring:

"A word to those who control the 'purse strings.' You have supported this Distribution Conference most generously by sending many of your men. The expense has been justified by the dividends you have received through contacts made. You may feel that because of the distance, you are not justified in sending as many as you have when the meeting was nearer home. This should not be the case, for the reason that the program is full of subjects that in themselves are outstanding. In addition, the opportunity to hear men of prominence in the industry address the joint sessions is an added reason for attendance. We will be looking for you at Houston."

The tentative program follows:

TUESDAY, May 7, 12:30 P.M.

ROUND TABLE LUNCHEON CONFERENCES

Construction and Maintenance
Appliances and Appliance Servicing
Meters and Regulators

WEDNESDAY, MAY 8, 10:00 A.M.

FIRST DISTRIBUTION CONFERENCE SESSION

"Distribution Design for Heavy House Heating Loads," G. J. Heckendorn, Public Service Co. of Colorado, Denver, Colo.

"Pipe Line Capacity and Methods of Calculating Flow of Gas in Distribution Networks," Lee Holtz, Southern California Gas Co., Los Angeles, Calif.

"Capacity of Distribution Networks," H. E. Bates, The Peoples Gas Light & Coke Co., Chicago, Ill.

"Housing Developments and Their Effect on Gas and Electric Systems," E. G. Watkins, Consolidated Edison Co. of New York, Inc., New York, N. Y.

Report of Subcommittee on Meters and Metering, A. W. Fuller, Chairman, Con-

solidated Edison Co. of New York, Inc., New York, N. Y.

Report of Subcommittee on Pipe Coatings and Corrosion, C. F. Turner, Chairman, The East Ohio Gas Co., Cleveland, Ohio.

Report of Subcommittee on Cast Iron Pipe Standards, C. C. Simpson, Chairman, Consolidated Edison Co. of New York, Inc., New York, N. Y.

WEDNESDAY, MAY 8, 12:15 P.M.-1:45 P.M.

LUNCHEON MEETING

Committee on Pipe Joints and Pipe Materials, E. G. Campbell, Chairman, The Peoples Gas Light and Coke Co., Chicago, Ill.

(There will be presented and discussed at this luncheon meeting on Pipe Joints and Pipe Materials, the report on Research on Boltless Couplings, sponsored by the above Committee.)

WEDNESDAY, MAY 8, 2:00 P.M.

SECOND DISTRIBUTION CONFERENCE SESSION

"Use of Pressure Regulators on Gas Appliances," H. L. Masser, Southern California Gas Co., Los Angeles, Calif.

"Ordinances Regulating the Installation of Gas Appliances," H. W. Geyer, Southern California Gas Co., Los Angeles, Calif.

"Tool Control," Lee Holtz, Southern California Gas Co., Los Angeles, Calif.

Report of Luncheon Conference Chairmen—

Construction and Maintenance, E. G. Campbell, Chairman, The Peoples Gas Light & Coke Co., Chicago, Ill.

Construction and Maintenance (second group), A. C. Cherry, Chairman, The Cincinnati Gas & Electric Co., Cincinnati, Ohio.

Appliances and Appliance Servicing, W. M. Little, Chairman, Arkansas Louisiana Gas Co., Shreveport, La.

Appliances and Appliance Servicing (second group), J. M. Pickford, Chairman, Northern Indiana Public Service Co., Hammond, Ind.

Meters and Regulators, A. W. Fuller, Chairman, Consolidated Edison Co. of New York, Inc., New York, N. Y.

OPEN FORUM

THURSDAY, MAY 9, 10:00 A.M.

THIRD DISTRIBUTION CONFERENCE SESSION

"Determination of the Current Required for Cathodic Protection," Dr. Scott Ewing, Research Associate, National Bureau of Standards, Washington, D. C.

"Studies in Microbiological Anaerobic Corrosion," Raymond Hadley, Susquehanna Pipe Line Co., Philadelphia, Pa.

"Sulphur Removal from Natural Gas," W. R. Wood, Girdler Corp., Louisville, Ky.

"Electrolysis Mitigation for Protection of Underground Distribution Systems Within Cities," R. J. Kuhn, New Orleans, La.

THURSDAY, MAY 9, 2:00 P.M.

SECOND JOINT GENERAL SESSION—DISTRIBUTION CONFERENCE AND NATURAL GAS SECTION CONVENTION

"Gas Hydrates," W. M. Deaton and E. M. Frost, U. S. Bureau of Mines, Washington, D. C.

Report of Main Technical and Research Committee, H. C. Cooper, Chairman, Hope Natural Gas Co., Clarksburg, W. Va.

Research Developments—U. S. Bureau of Mines. (Speaker to be announced.)

FILM (covering production, construction and transmission phases of pipe line operations). To be presented by C. H. M. Burnham, Panhandle Eastern Pipe Line Co., Kansas City, Mo.

Production and Chemical Conference Will Hold Spotlight in May

THE numerous problems of the production and chemical men in the gas industry will receive considerable attention at the Joint Production and Chemical Committee Conference to be held at the Hotel Pennsylvania, New York City, May 20-22.

Preliminary plans for the conference indicate that some highly informative papers, replete with new and constructive information, will be presented covering a wide variety of technical subjects. The program is being arranged under the direction of S. J. Modzikowski, of The Peoples Gas Light & Coke Co., Chicago, chairman of the Chemical Committee, and W. K. Beard, of The Philadelphia Gas Works Co., chairman of the Gas Production Committee.

A feature of the opening session will be a paper by Arthur E. Pew, vice-president, Sun Oil Company, Philadelphia, on the subject "Effect of Marketing and Refining Methods of the Oil Industry on Future Availability of Enriching Oils." Other speakers include Walter C. Beckjord and Alexander Forward, president and managing director, respectively, of the Association.

Luncheon Meetings

The series of round table luncheon meetings will again be held this year, scheduled for Tuesday afternoon, May 21. During the past years, these luncheon meetings have proved one of the most popular features of the conference since they offer an opportunity for a frank exchange of views on the particular problems confronting gas men.

The tentative program for the three-day conference includes the following papers sponsored by the Chemical Committee:

Determination of the Cause of Pilot Outage—W. L. Shively, Boston Consolidated Gas Company, Everett, Massachusetts.

Influence of Pilot Design on Tendency to Outage—A. G. A. Testing Laboratories, Cleveland, Ohio.

Comparison of Different Packings in Absorption and Stripping—Professor C. C. Furnas, Yale University, New Haven, Conn.

Motor Fuel from Coke Oven Light Oil—B. J. C. Van der Hoeven, Koppers Company, Pittsburgh, Pa.

Living Organisms in Dry Box Purification of Manufactured Gas—Dr. G. E. Seil, E. J. Lavino and Company, Philadelphia, Pa.

Evaluation of Purifying Material—J. W. Penney, Jr., Boston Consolidated Gas Company, Boston, Mass.

Further Developments in the Determination of Water Vapor in Gaseous Fuels—Dr. A. W. Gauger, Pennsylvania State College, State College, Pa.

Empirical Relation Between the Physical Characteristics of an Oil and Its Yield as Determined by a Cracking Test—W. E. Kugel and E. M. Bliss, Public Service Electric and Gas Company, Harrison, N. J.

The Gas Production Committee will sponsor the following papers, in addition to Mr. Pew's paper on the oil industry:

Foundry Coke—B. P. Mulcahy, Citizens Gas and Coke Utility, Indianapolis, Ind.

Coal Expansion—V. J. Altieri, Eastern Gas & Fuel Associates, Everett, Mass.

Recovery of Light Oils from Coke Oven Gas—Wm. Tiddy, Director of Research and M. Miller, Semet-Solvay Company, New York, N. Y.

Hight B.t.u. Gas as Made by the Refractory Screen Process for Mixing with Natural Gas or as a Substitute for Natural Gas—H. M. Blain, New Orleans Public Service Inc., New Orleans, La.

Theoretical Advantages of Low Air-Steam Ratios—J. Hawley Taussig, The Philadelphia Gas Works Co., Philadelphia, Pa.

It is also hoped to secure a paper by C. J. Ramsburg of the Koppers Co., Pittsburgh, Pa., on the addition of oil to coal for carbonization, and a further contribution on experience with the operation of waterless holders.

Laboratories

N. T. Sellman, *Chairman, Managing Committee*
R. M. Conner, *Director*
W. H. Vogan, *Supervisor, Pacific Coast Branch*

New Requirements for Gas Appliances Accepted by American Standards Association

On February 23, 1940, ten sets of recommended revisions to American Standard Approval and Listing Requirements for various gas appliances and accessories sponsored by the American Gas Association were adopted by the American Standards Association. These revisions bring up to date practically all current major gas appliance standards. They will become effective January 1, 1941.

Among the approval requirements recently adopted as American Standard are those for central heating gas appliances, clothes dryers, domestic gas ranges, hot plates and laundry stoves, gas space heaters, and gas unit heaters. The new American Standard listing requirements cover conversion burners, automatic pilots and gas appliance thermostats. In addition, new American Standard installation requirements for conversion burners were adopted by the American Standards Association. New editions of these various revised requirements have just been published and distributed to all interested manufacturers.

House Heating Standards

In view of the large number of gas users who will be benefited, perhaps the most outstanding provisions incorporated in the new American Standards are those covering testing of central house heating appliances, space heaters, and unit heaters for use with bottled gases. During recent years there has been a considerable increase in the use of propane and butane gases as well as mixtures of the two, particularly in rural sections and where city gas lines have not yet been extended. As a result of satisfactory consumers' experience with domestic gas ranges and water heaters approved for use with these liquefied petroleum gases, there has been a corresponding increased demand for Laboratories' approval on other gas burning equipment.

Additional requirements adopted by the American Standards Association make it possible for manufacturers to provide approved appliances for use with liquefied petroleum gases to these customers. With the exception of gas refrigerator requirements, which will unquestionably incorporate similar provisions in their next revision, all major types of gas appliances may now be tested and approved in the Laboratories for use with liquefied petroleum gases. Similarly, provisions were incorporated to approve these appliances for use with butane-air gas.

Among the specifications incorporated to safeguard consumers' interests are requirements for suitable marking to indicate clearly the gases for which the appliance was approved. The statement "Approved for use only with Approved Liquefied Petroleum Gases" will show that the appliance was tested in the Laboratories for use with butane, propane or mixtures of these gases. The statement "Approved for use only with approved Propane Gas (or Butane-Air Gas)" will clearly indicate that the appliance is certified only for use on the gas specifically named.

In addition to indicating for which gas the appliance was designed, other informative statements are required on the name plates of the various appliances; unit heaters, for example, bear instructions covering their installation in garages, while furnaces are marked to indicate whether they are provided with means for forced circulation of warm air—all of which are self-explanatory to the purchaser and at the same time tend toward better gas service in consumers' homes.

Manufacturers will be interested in the simplification and clarification of the revised editions to these American Standards. Although the specifications were made much more rigid than the current standards, they reflect the progress made in the art of manufacturing satisfactory gas equipment. In the experience of the Laboratories, each modification adopted by American Standards Association has been not only met by the manufacturers but additional improvements have been added as well.

Appliances complying with the 1941 requirements will provide safer, better constructed and more efficient gas buring equipment than ever before, thus increasing their value to users of gas fuel.

Photography Used in Laboratories' Testing Procedure

One of the most important steps in testing and approving or listing an appliance or accessory submitted for American Gas Association approval is the making of a complete description thereof for identification purposes. This description is then available for a permanent record and is frequently used by Laboratories inspectors to ascertain whether production models are being made in exact conformity with models approved in the Laboratories.

Until photography was recently introduced, making descriptions of appliances or accessories was the "bottle neck" in testing activities. Preparation of detailed sketches for blue-printing of the various parts as well as of the entire assembly when they could not be supplied by the manufacturer was necessarily time-consuming and, in some instances, required a considerable portion of time of engineers in making the tests. With the exception of cross-section views, they have been very successfully replaced with photographs.

In the Laboratories the making of descriptive drawings slowed up testing activities and delayed return shipment of tested equipment to manufacturers. Photographs speed up the making of descriptions, as in most instances, it is feasible to inscribe essential dimensions directly on the parts photographed. For such parts as burners, dimensions are inscribed on a paper background on which the burner is photographed.

The accompanying photograph illustrates the new method of making descriptions. By eliminating all drawing with the exception of cross-sections, Laboratories' testing engineers are able to devote more time to actual test operations. Although the cost for these photographs is approximately the same as drawings, they are far more convenient to the inspector in the field. This in turn speeds up inspection of a model in the manufacturer's plant.

Laboratories' photographic equipment

Industrial Gas Featured at N.E.G.A. Meeting

Ralph D. Hawkins

THE industrial gas division of the New England Gas Association insured extra value for its Bridgeport, Connecticut, meeting on Friday, March 8, by scheduling it coincident with a New-England-wide exhibit of industrial tools and plant equipment sponsored by the Bridgeport Tool Engineers Association. Hence, 40 New England industrial gas men were able to hob-nob with customers and representative of allied trades, join plant inspection parties, and see a corking good industrial equipment show, all in addition to attendance at their own Spring meeting.

Under the leadership of Ralph D. Hawkins, The Bridgeport Gas Light Co., and chairman-elect of the N. E. G. A. industrial division, most of the group took advantage of the morning preceding the luncheon and afternoon business session by visiting the plant of the Singer Sewing Machine Company. Great interest in this plant lay in the complete and diversified heat-treating department used in processing the almost innumerable small parts involved in full-line industrial sewing machine production.

Cecil C. Ogren, Boston Consolidated Gas Co., and 1939 chairman of the division, presided both at the luncheon and at the business session which followed. Subsequent to the election of officers, papers were delivered by: J. A. Comstock, consulting metallurgist, Surface Combustion Corp., Toledo, Ohio; Herman Koester (for W. Wirt Young who was absent because of family illness), W. Wirt Young Co., gas consultants, Watertown, Conn.; and Harry W. Smith, Jr., director of industrial publicity, American Gas Association.

Mr. Comstock's remarks concerned the most recent developments in the tricky but promising field of furnace atmospheres for annealing, hardening, tempering and nitriding. Particular stress was laid upon the chemical equilibria of gas- and charcoal-produced protective atmospheres in the heat treatment of modern tool steels, and upon the design and the capabilities of newer atmosphere furnace equipment.

An analysis of the New England market for small gas furnace applications was presented by Mr. Koester for W. Wirt Young, and included a complete breakdown by size of all furnace-using industries in one medium-size New England industrial city.

Following the meeting, and at various other times during the day, groups of members of the industrial division visited the display sponsored by the Bridgeport Tool Engineers Association, Inc., which included impressive booths featuring industrial-gas-burning equipment by the A. F. Holden Co. and Charles A. Hones, Inc.

LOAD BUILDING THROUGH PACKAGED INDUSTRIAL EQUIPMENT

(Continued from page 155)

tures contribute to the shortest possible period of amortization and the best possibilities of selling gas fuel.

Reduced investment for the required gas utilization equipment provides a means of including in the group of good prospects the greatest percentage of the industrial plants on any utility company's mains. The greater the number of plants which can be included in this group the greater are the possibilities of obtaining additional load.

The advantages and economies packaged industrial equipment make possible, directly increase the industrial gas load obtainable.

Irrespective of the fuel which is competitive to gas in any particular locality, the sponsors of that competitive fuel are endeavoring by every means possible to better utilize the fuel they have to offer. Gas fuel is continually faced with the necessity of maintaining its position in this competitive situation. To do so, every advantage must be used to its fullest extent. Packaged industrial equipment can be of marked assistance in keeping gas fuel well ahead of competitive fuels and help it maintain the reputation—"the ideal industrial fuel."

One angle of this competitive situation that gas industrial engineers cannot afford to overlook is the sponsoring of the best gas-burning equipment obtainable. The industrial load must be sold with permanency in mind. The fuel must be utilized in the best manner possible to insure the load against inroads from competition. Any weak point in its use will be seized upon by competition as an entering wedge to displace gas in the industrial field.

The best insurance against losing the existing and to obtaining future industrial gas load can be procured through the insistence that the users of gas fuel purchase modern, sturdy, and the most efficient industrial gas-burning equipment. Standardization by the manufacturers of such equipment makes it possible to offer the user the best equipment at the lowest prices, and the utility companies the best insurance against the success of competitive fuels.

Only through the cooperation of the utilities and the equipment manufacturers can gas fuel attain and hold its maximum industrial load, the utilities to supply the best fuel at the lowest possible cost and the equipment manufacturers to supply the best equipment at the lowest possible prices. To that end all efforts should be jointly directed.

Personnel Service

SERVICES OFFERED

Technically trained, experienced, commercial, industrial or house heating sales **merchandiser** whose knowledge of rate making, budget control, advertising along with proven sales methods and sales ability will increase and sustain revenues. **1345.**

Manufacturer's representative with excellent metropolitan New York utility contact selling automatic gas storage water heaters and accessories, boiler and pipe compounds on commission basis would like to add to line non-competing specialties of merit. **1348.**

Aggressive young man desires change with future. Two engineering degrees. Eight years' extensive experience with large leading natural and manufactured gas properties on distribution—construction, **engineering** and operation; **appliance servicing,** testing, and servicing education. Excellent references. (35, married.) **1349.**

Salesman. 10 years utility, good education; gas and electric appliances, illumination sales; capable of training dealers, and salesman. Employee prospect building, cooperative advertising and promotion experience, A. G. A. sales course completed; distribution and production experience; (29). **1354.**

Sales Supervisor (38) single—excellent contact man—12 years' experience directing salesmen selling gas service direct to consumer. Desires change—willing to travel. **1356.**

College graduate (37) engaged in statistical studies involving valuation utility systems and properties from earnings point of view; experience with **statistics, research, taxes.** Familiar with forms for electric and gas utilities and holding company act and securities act forms. Formerly with large national utility organization. **1357.**

Will graduate from University of Oklahoma in June, 1940 with degree in **Natural Gas Engineering.** Have college scholastic average of B and am member of Tau Beta Pi. Experience: Three summers of Natural gas field work and one in office of gas purchasing department. Excellent references. **1358.**

Man capable of taking charge of a gas meter repair shop or service department desires to become associated with a progressive and growing gas company. Now employed as superintendent of a **meter repair shop.** Will be pleased to furnish references to confirm above statements. **1359.**

Gas Salesman and Combustion **Engineer.** Four years' experience in marketing industrial commercial and heating gas. Experienced in design, installation and servicing gas burning equipment. Capable of making industrial surveys. Familiar with chemistry of combustion and methods of making tests of efficiency of utilization. Now employed but desires change. **1360.**

Advertising and **public relations** man. Eighteen years' advertising agency and public utility experience in, appliance educational, institutional and customer contact advertising copy, also cooperative dealer campaigns and employe information courses. **1361.**

POSITIONS OPEN

A manufacturer well and favorably known in the gas industry desires **representation** for **water heaters** and conversion burners with an established sales agent on commission basis in St. Louis, Missouri, and adjacent territory within approximately a 200 mile radius. **0342.**

Young **industrial gas engineer** for position with manufacturer of industrial gas equipment. Prefer graduate engineer with some experience. All details first letter. **0343.**

Young chemical or mechanical engineer to act as **assistant plant superintendent**—manufactured gas—southeast. **0344.**

Young man experienced in volume water heating **sales** for **contact work** with architects, owners, and plumbing contractors—Florida. **0345.**

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